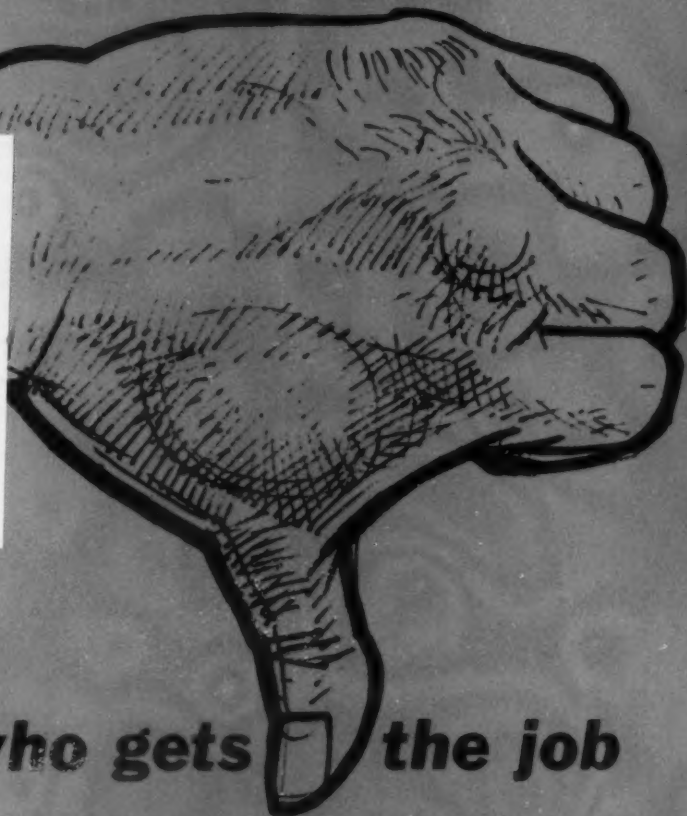


The **REFRIGERATION & AIRCONDITIONING** *Business*

OCTOBER 1961

On Airconditioning Bids...

EDITORIAL DEPT.
UNIVERSITY MICROFILMS INC
313 NORTH FIRST ST
ANN ARBOR MICH 48106



**who gets the job
when the customer
says NO?**

System Capacity Graphs

help you pick
the proper coil
for any
refrigeration job

Upgrade: PROJECT

Why bother
participating
in industry
activities?

The magazine for the Installing Contractor-Dealer of airconditioning
and commercial and industrial refrigeration



HERE

WE

GROW AGAIN VIKING

COPPER TUBE CO.

See pages 30 & 31 . . .

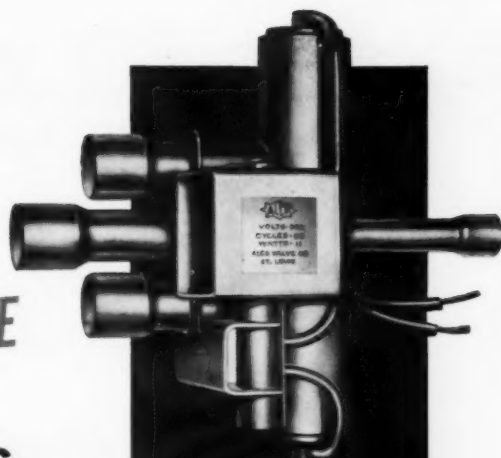
Made by **ALCO**
OF CAST IRON AND STEEL
like a Compressor
for LONG RELIABLE LIFE

4-WAY REVERSING VALVES

for all reverse cycle systems

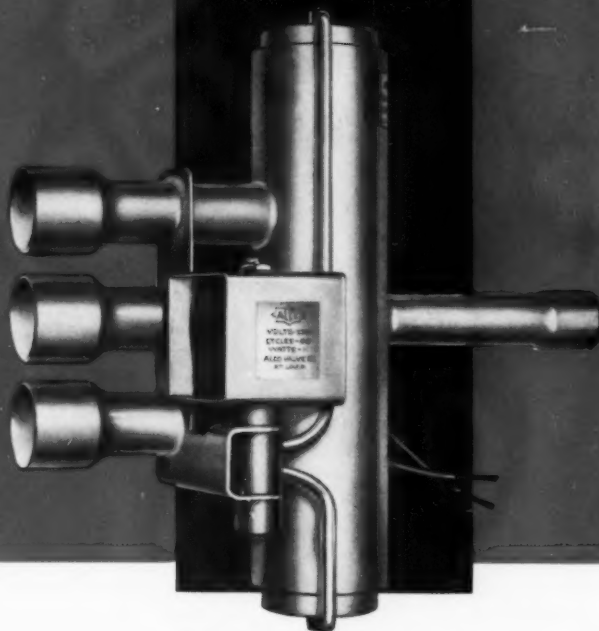
Features:

- fine machining and precision honing of cast iron slide and steel outer shell—NO PLASTICS ARE USED.
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- shifting (change cycle) while the system is in operation with a 300 PSI differential.
- rapid shifting—to shorten change-over time and therefore shorten defrost cycle.
- the shifting of the valve independent of any pressure drops, and efficient shifting under any combination of operating conditions.
- mounting in any position—except with the pilot valve upside down.



4WB4-57 Capacities:
2 to 3 tons—Refrigerant 12
3 to 5 tons—Refrigerant 22

4WB6-79 Capacities:
3 to 5 tons—Refrigerant 12
5 to 7½ tons—Refrigerant 22



Call your Alco wholesaler—
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- BUY QUALITY
- BUY ALCO

8223

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843 KINGSLAND AVE. • ST. LOUIS 5, MO.

The one complete line of refrigerant controls: Thermostatic Expansion Valves Refrigerant Distributors
Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

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Tenney LV Unit A Deluxe Package

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AT LOW VELOCITY



Refrigeration, Heating
& Air Conditioning
Products Division

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1090 SPRINGFIELD ROAD • UNION, NEW JERSEY

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OCTOBER 1961 / THE REFRIGERATION & AIRCONDITIONING BUSINESS

FEATURES

33 Let's Talk Business: editorial of the month

Our nation's civil defense effort needs your participation. Here's what you can do to help.

34 Why bother participating in industry activities?

Upgrade

A manufacturer, a wholesaler, and a contractor tell why they're willing to spend time and effort on such activities, and spell out what they get in return

36 ARI Show promises four full days

Upgrade

Now is the time to start making your plans for the trip to Los Angeles next February

37 Who gets the job when the customer says no?

Upgrade

One of our editors investigates some jobs *lost* by airconditioning contractors. By talking to the customers involved, he found out just what happened—and why.

40 He finds leasing pays big dividends

This contractor claims you're missing 25% of your market if you don't lease refrigeration and airconditioning equipment

41 Custom-built case pays off two ways

Both contractor and customer profit by this special \$3000 display fixture which spurs restaurant's pie sales

42 Preassembled fan-coil units

... speed installation for 15-story, all-glass building

45 Service Clinic for Contractors

- You need to know more than Btus to keep service customers happy. Could you answer these questions satisfactorily?
- Service Level helps select more economical V-belt drives

50 Applications Manual by Hugo C. Smith

System capacity graphs help you pick the proper coil for any refrigeration job. Tear them out and use them.

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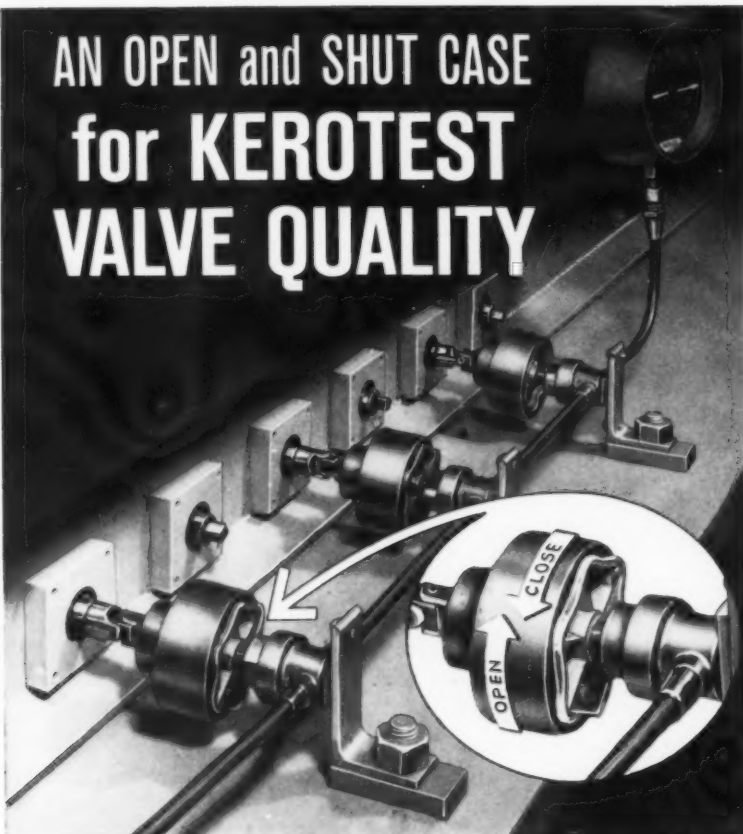
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Huron Road, Cleveland 15, Ohio.

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AN OPEN and SHUT CASE for KEROTEST VALVE QUALITY



TESTED and PROVED CONSTRUCTION

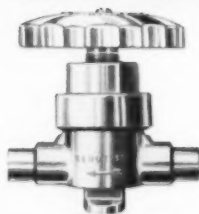
Kerotest engineers uncover vital performance data by opening and closing these valves a specific number of cycles per minute under controlled torque and pressure. Seating surfaces, materials and design features are checked periodically throughout the grueling test. Cycling stops and a final performance analysis is made only after one of the valve parts is destroyed on this Kerotest designed endurance testing device.

The trouble-free dependability and long life built into all Kerotest valves, fittings and accessories stem from more than a half dozen exacting quality control procedures. Kerotest valve performance under extreme operating conditions has been proven throughout the world for more than fifty years.

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AT YOUR LOCAL WHOLESALERS**

KEROTEST MANUFACTURING CO.

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**KEROTEST R224
DIAPHRAGM PACKLESS LINE VALVE**

The high quality brass valve for all types of refrigeration and air-conditioning systems. Especially built for high vacuum service, liquefied petroleum gases, gasoline, instrument control panels, oxygen (degassed), compressed air, water, nitrogen and refrigeration boards.

KEROTEST QUALITY CONTROLLED FEATURES

- Generous areas allow ample flow
- Durable, forged brass body and bonnet
- Beryllium copper and stainless steel diaphragms
- Nylon seat
- Positive back seating

Sizes 1/4" through 3/4"—flare and ODS
Maximum working pressure 750 psig

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The REFRIGERATION & AIRCONDITIONING Business

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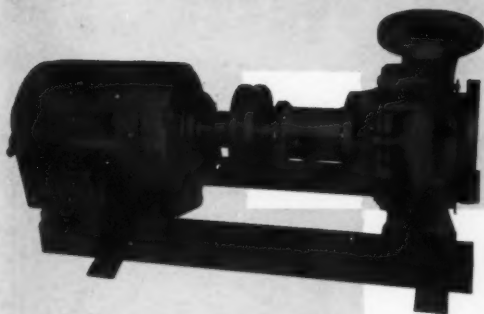
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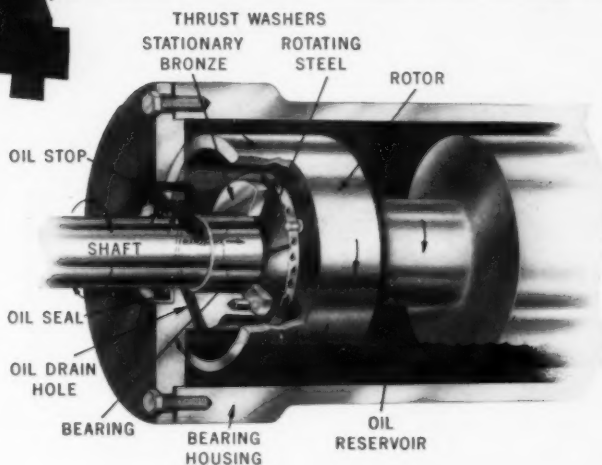
HANDLING & SHIPPING
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MATERIAL HANDLING ENGINEERING
MODERN OFFICE PROCEDURES
OCCUPATIONAL HAZARDS
POWER TRANSMISSION DESIGN
PRECISION METAL MOLDING
WELDING DESIGN & FABRICATION

NEW DUNHAM-BUSH B9 CENTRIFUGAL PUMP WRITES ITS OWN SPECS



*"With sleeve bearing
forced feed lubrication..."*

Rotor picks up oil from sump... forces up to oil stop and flows back to lubricate sleeve bearings and shaft... passes through fingers, lubricating thrust washers and returns to sump... process is continuous.



and self aligning flexible coupling"

People who know pumps will readily recognize the superior lubrication and coupling advantages of the new Dunham-Bush B9 centrifugal pump. Exclusive and unique sleeve bearing forced feed lubrication extends bearing life far beyond normally expected operation. A "self aligning" coupling that connects sleeve bearing motor to pump eliminates realignment on the job and provides considerably longer coupling and bearing life. Additionally, the B9 is designed to ensure ultra quiet operation... low maintenance... superior pump performance.

For facts about this startling new feature packed centrifugal pump, write for Form No. 1445.

- 1750 RPM Sleeve Bearing Motors
- Capacity up to 1000 GPM and Heads to 80 feet
- 11 Models—1 H.P. thru 10 H.P.
- Base-Fabricated Angle Iron for noise elimination and easier cleaning in and around pump
- Seal-Rated at 250 degrees as standard equipment
- Specifically designed for efficient and quiet handling of chilled or hot water in comfort conditioning systems



Request additional literature describing the complete Dunham-Bush family of Pumps... In-Line Circulators and Close Coupled Centrifugal Pumps

DUNHAM-BUSH

DUNHAM-BUSH, INC.

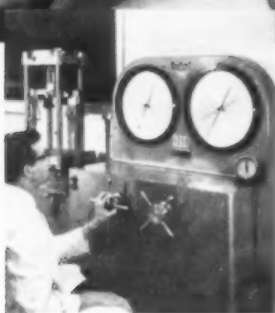
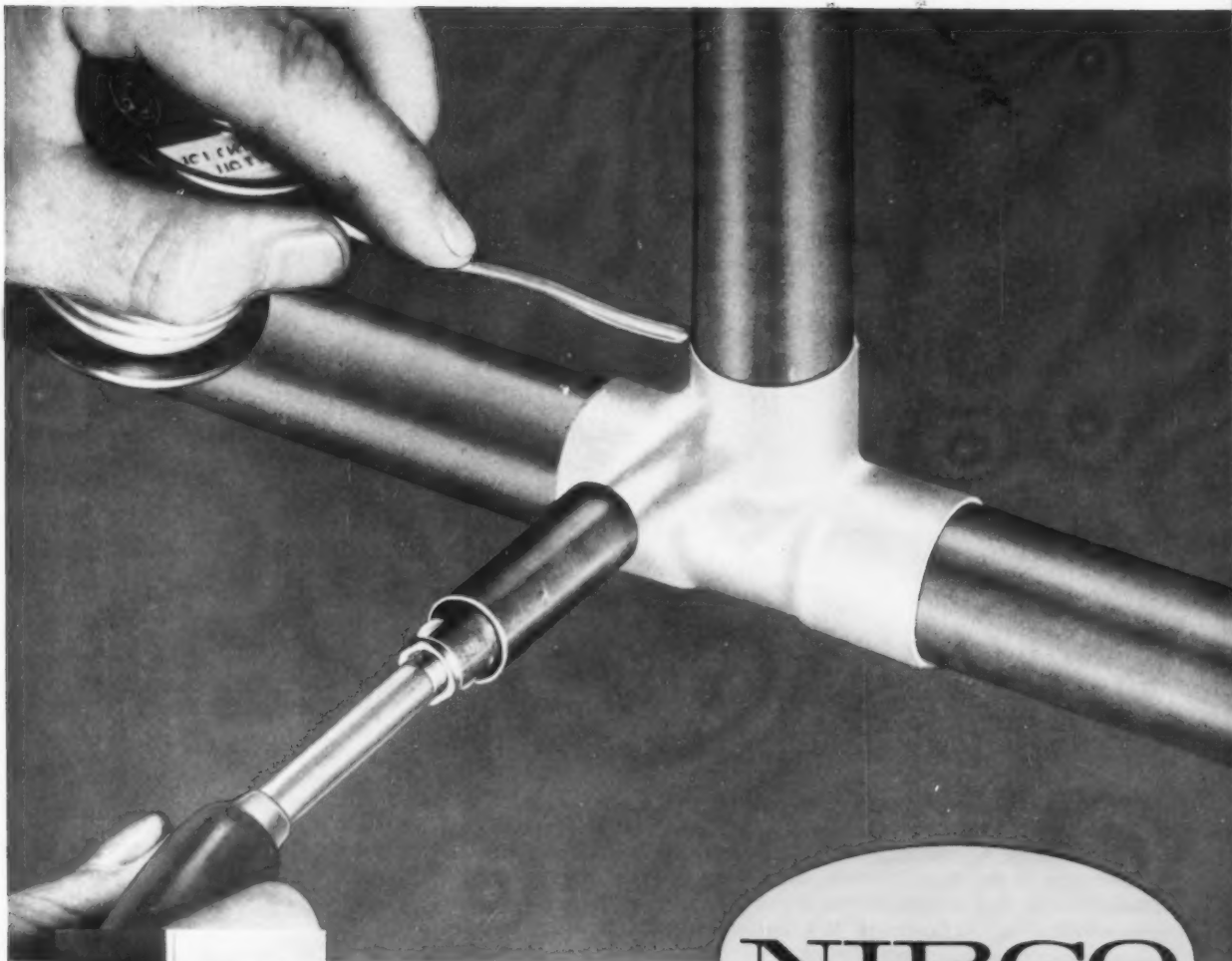
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NEW FROM NIBCO...

Fittings that need no



Stronger, Too! According to BMS report 58, a pre-applied film of tin-lead solder over the bronze surfaces of joints tested increased the tensile strength by nearly 30%. It is this added strength of pre-applied tin coating that makes Color-Guard cast fitting joints stronger as well as more economical.

NIBCO



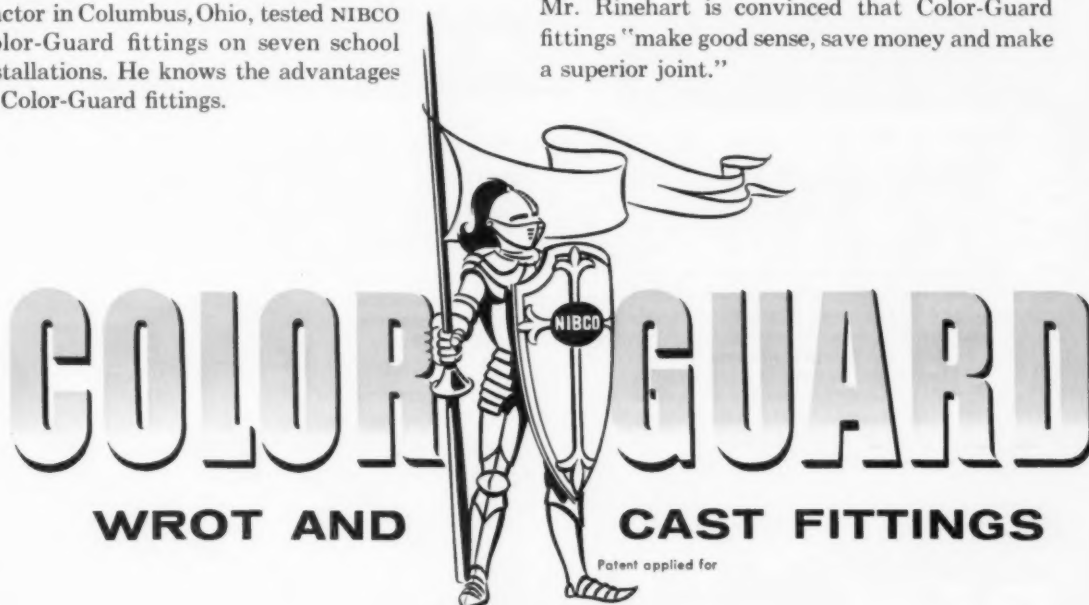
cleaning, no fluxing!

Now . . . NIBCO copper fittings are protected against oxidation *right from the factory*. All oxides are chemically removed, and a micro-coating of tin is applied—a “color-guard” that assures faster, easier, safer installation of copper plumbing systems. And, NIBCO Color-Guard fittings are prefluxed with a rosin flux that lasts indefinitely. One more step eliminated!

As every mechanic knows, brushes, steel wool, and sand cloth quickly wear out, with the result that not all cleaning efforts are as effective as others. And, there is always the chance of error in visual judgment. Yet, *a maximum strength joint depends on the removal of all the oxides and the right type and amount of fluxing used*. NIBCO's Color-Guard eliminates chance of error—never loses its protective value. The micro-coating of tin and proper fluxing actually help insure a leak-proof bond in wrought and cast fittings alike. Send for full details. NIBCO Inc., Dept. L-6910 Elkhart, Indiana.

William Rinehart, a plumbing contractor in Columbus, Ohio, tested NIBCO Color-Guard fittings on seven school installations. He knows the advantages of Color-Guard fittings.

According to Mr. Rinehart's job cost estimate, it takes 60 seconds to clean the end of a half-inch solder cup, 75 seconds for a three-quarter-inch, and 90 seconds for a one-inch. With overhead and fringe benefits figured in, it costs him 12½¢ for every 60 seconds work in installing a half-inch elbow for which he pays \$.073. The prime example of his savings in using NIBCO Color-Guard fittings is that for this one-half-inch elbow he pays \$.077 and saves 60 seconds on each end in not having to clean it . . . 25¢ saved as against an additional \$.004 that he paid for the elbow. These calculations do not include the extra time (and money) saved by no longer having to flux the fitting as before. No wonder Mr. Rinehart is convinced that Color-Guard fittings “make good sense, save money and make a superior joint.”



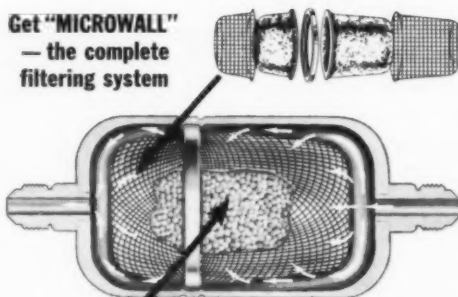
M FILTER-DRIERS

McINTIRE "M" Filter-Driers are the only filter-driers that give 100% separate drying action and filtering action. The entire bed of Permasorb desiccant is encased inside the protective "Microwall" filter. All inlet refrigerant and oil are first filtered by the "Microwall"—then dried by the Permasorb—and again filtered at the outlet. The desiccant remains clean, unclogged—gives 100% drying action for longer service. Gleaming polished and lacquered all-brass spun shells are corrosion resistant, strong, attractive. Buy "M" Filter-Driers at your wholesaler in many connection sizes for 1/6 to 10-ton systems.



— with the
TRUE Double Action !

Get "MICROWALL"
— the complete
filtering system



Plus **Permasorb**® high capacity desiccant
WITH MOLECULAR SIEVE



DFN LIQUID INDICATORS

DFN Liquid Indicators are not only highly dependable in service—they are fast and easy to install. No gaskets, no springs—can be brazed into the line without assembly or disassembly. Once installed, you have a completely hermetic system. DFN Liquid Indicators are made of rugged forged brass body. Non directional, unrestricted flow. Approved for safety by U.L. for 500 psi. working service. Single or double port types in wide range of standard or special connection sizes. Buy them at your wholesaler.



**Guaranteed
Permanently Leakproof !**

HERMETICALLY SEALED AS A ONE-PIECE UNIT



Crystal clear glass sealed-in
by proven high-temperature
fusing method.



DFN

THE McINTIRE COMPANY, LIVINGSTON, N. J.

Since 1925—Specialists in Drying, Filtering, Straining.

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OCTOBER 1961/THE REFRIGERATION & AIRCONDITIONING BUSINESS

M-PAK MODULAR PACKAGES...A NEW ADDITION TO B & G® AIR CONDITIONING AND REFRIGERATION EQUIPMENT

A COMPLETE LINE OF REFRIGERATION AND AIR CONDITIONING COMPONENTS



B&G CONDENSERS

Lighter, more compact units, featuring quiet, vibration-free operation, uniform gas distribution, cleanable tubes and higher operating efficiencies.



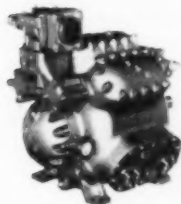
B&G EVAPORATORS

Featuring non-slugging design...tube bundle proof against freeze-up damage...positive oil return.



B&G SUCTION LINE HEAT EXCHANGERS

Aid thermal expansion valve operation, prevent liquid slugging.



B&G COMPRESSORS

Precisely engineered for vibration-free operation with all the advantages of "open" units. All units have one bore—a few interchangeable parts service them all.



B&G CENTRIFUGAL PUMPS

A full range of quiet pumps for refrigeration and air conditioning systems.



B & G® MODULAR PACKAGES

Modular packages increase availability...speed-up delivery

In its M-Pak Modular Packages, B&G presents a new advance in efficiency designing of air conditioning and refrigeration equipment. M-Pak units are built around five basic sizes of open-type compressors. Factory-stocked motors, condensers, evaporators and controls can be added to these basic units to make a comprehensive line of "packages" of from 7½ to 150 tons.

1. For example, motor compressors are produced by adding a B&G-built motor to a B&G basic compressor. 2. Further addition of a B&G condenser and a standard base makes a condensing unit. 3. Addition of evaporator and control panel results in a package liquid cooler.

All major components of M-Pak units are designed, manufactured, and guaranteed by B&G...one responsibility for the entire package. This, we believe, is an exclusive feature.

B&G also makes a complete line of refrigeration and air conditioning evaporators, condensers and centrifugal pumps—with many commonly used sizes available for immediate shipment from factory stock.



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Dept. GV-45 Morton Grove, Illinois

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MUELLER BRASS CO. *Streamline*[®]
REFRIGERATION PRODUCTS . . . THE KEY
TO A CONSTANTLY CLEAN, DEPENDABLY
DRY AND THOROUGHLY EFFICIENT SYSTEM



DRYMASTER BALANCED FILTER-DRIER

Gives superb filtering and drying, protects against acid, moisture and sludge through use of "Hi-Fi" filter block desiccant, superfine monel screen filter tube and inlet distributor disc. Drymasters are available in 59 different sizes and styles with capacities from 2 tons through 165 tons . . . male and female flare or solder-type end connections.



NEW REFILLABLE ANGLE-TYPE DRYMASTER

Gives added convenience—can be recharged in minutes.

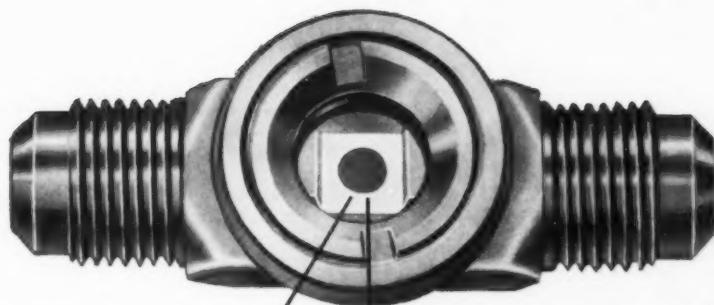


MUELLER BRASS CO.

VAMPCO ALUMINUM PRODUCTS, LTD., STRATHROY, ONTARIO •

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OCTOBER 1961 / THE REFRIGERATION & AIRCONDITIONING BUSINESS



Round blue spot shows
the system is full and dry.



Round pink spot shows
that moisture is present.

Color spot indicator loses its shape when refrigerant level drops.

This dual-purpose indicator gives the same dependable, leak-proof performance that has made the Streamline single port liquid indicators famous for years but has the added advantage of being a combination moisture and liquid indicator all in one compact unit. A color spot indicator in the new Vuemaster makes possible an instant check of the refrigerant. When the color spot is round and blue, the system is sufficiently charged and the refrigerant is in a normal, dry condition. The spot changes to pink when excessive moisture is present and loses shape when refrigerant supply is low.

Combining engineering skill, experience and quality-controlled production, the Mueller Brass Co. manufactures a line of refrigeration and air-conditioning products that surpasses the most rigid code requirements. Their absolute dependability makes them first choice in any refrigeration or air-conditioning system. Always buy and install Mueller Brass Co. products . . . manufactured in the most complete range of styles and sizes in the industry. Get them at your wholesaler's today.

Vuemaster[®] LIQUID-MOISTURE INDICATOR



PORT HURON 14, MICHIGAN

Exclusive Canadian Representative for Mueller Brass Co. Air Conditioning and Refrigeration Products

MADE IN U.S.A.
TO THE STANDARDS
OF AMERICAN INDUSTRY

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THE REFRIGERATION & AIRCONDITIONING BUSINESS/OCTOBER 1961

BUSINESS *Briefs*

Three industry groups jointly prepare fan-coil standard for certification

Three industry groups have jointly prepared and published a standard and program for room fan-coil units for industry certification. Those sponsoring the move are Air-Conditioning and Refrigeration Institute, Air Moving and Conditioning Assn., and Institute of Boiler and Radiator Manufacturers.

Designated Industry Standard 441, the new paper was developed "for the purpose of establishing industry standards for room fan-coil airconditioners and to provide industry-approved procedures for establishing cooling and heating ratings" under standard rating and various application conditions, according to a joint committee.

Both the standard and the program are slated for an October, 1962, operating date. The program will be administered by ARI.

The program will require participating manufacturers:

- (1) to execute a license agreement with ARI which specifies the conditions of participation and authorizes publication of approved standard ratings and display of the certification symbol by firms obtaining the license;

- (2) to express both cooling and heating capacity ratings in Btuh;

- (3) to have equipment proposed for certification pre-certified and tested at an independent laboratory before October, 1962;

- (4) to have units tested at random by an independent lab with results of these tests reported to the fan-coil rating committee;

- (5) not to publish approved standard ratings or display the certification symbol on products or in literature unless authorized by ARI to do so;

- (6) not to be a member of any of the three sponsoring groups to obtain approved standard ratings

for their products or to participate in the program.

Stewart E. Lauer, former president and board chairman, York Corp., is chairman of the joint liaison committee which developed the standard and program. Alan Decker, Dunham-Bush, Inc., heads the joint committees on engineering and rating.

Nibco posts \$5 reward for defective valves

Nibco Inc. is out to apprehend each of its defective valves and fittings that may be on the loose. A \$5 reward has been posted for each valve or fitting turned in to wholesalers and proven to be faulty upon installation. Nibco will also replace the defective item.

"Faulty fittings and valves can be just as dangerous as any bandit that ever roamed the West," said



Nibco president Paul Nankivell. "We are out to get any that escaped factory inspection."

Nankivell added that Nibco recently started an additional quality control system to provide greater security for its customers.

CALENDAR OF EVENTS

October 1-4, 1961

American Gas Association
(Annual Convention)
Statler-Hilton Hotel
Dallas, Texas

October 8-11, 1961

National Commercial Refrigerator
Sales Association (Annual Convention)
The Riviera Hotel
Las Vegas, Nev.

February 12-15, 1962

12th Exposition of Air-Conditioning,
Heating, and Refrigeration Industry
Great Western Exhibit Center
Los Angeles, Calif.

Production facilities moved to Scranton by Anemostat

All production, research, and development facilities have been moved to a new plant in Scranton, Pa., by Anemostat Corp of America. The 165,000-sq.ft., 1-story plant will produce air diffusers, high velocity air distribution equipment, and air meters.

The company's research and development laboratories have been expanded to include a new engineering center of 10,000 sq.ft. for measuring radiated sound power of air flow and temperature equalization.

Anemostat's new Scranton address is 888 North Keyser Ave. Its general sales offices are now at 25 W. 43rd St., New York City.

Central airconditioning section formed by G.E.

A new central airconditioner section has been formed by General Electric Co. It comprises the Tyler, Texas, central airconditioner plant, and the Trenton, N.J., furnace plant. W. J. McCullough has been named general manager.

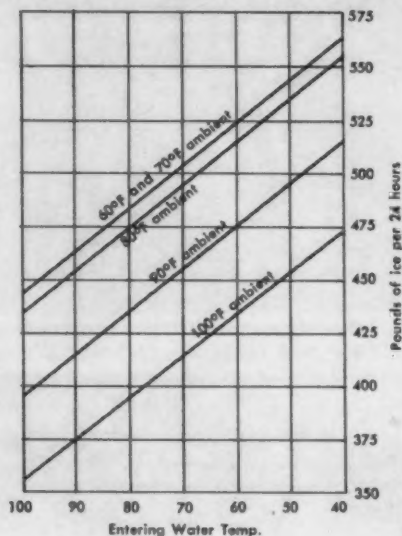
Continued on page 84

what makes
CRYSTAL TIPS ICE MAKERS
 easier to sell?



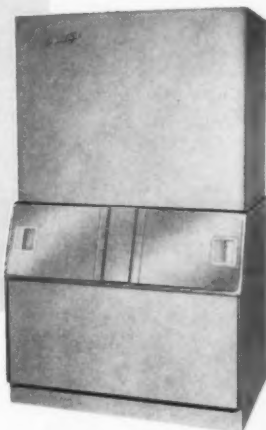
22% MORE
ICE PER DAY!

MODEL B-500B — 24 HOUR ICE PRODUCTION CHART



Check this ice making capacity chart with any other ice maker of similar size and price and you'll discover Crystal Tips tops them all.

You can give your customers *more* ice per day when you deliver the Model B-500-B Crystal Tips ice maker. Check the ice making capacity chart (left) with that of any other ice maker of similar size and price. When you do, you'll see Crystal Tips is "tops". Crystal Tips is also the winner when you compare space requirements, dependability, serviceability and initial investment costs. All this PLUS bigger distributor profits are mighty BIG reasons why you can make more money selling Crystal Tips ice makers.



MODEL B-500 Crystal Tips
2-in-1 Ice Maker. Air and
water cooled models available.

This air-cooled Model B-500 is selling better than ever because it makes more ice per day. It also gives your customers a choice of TWO types of ice... large, round, clear ice cubes or tasty, hard, fast cooling ice chips. Write today for complete facts... mail coupon *now*.

You can make more money selling
Crystal Tips ice makers.
Clip and mail coupon today
and we'll tell you how...



Crystal Tips

First name in automatic ice makers

AMERICAN AUTOMATIC ICE MACHINE CO.
1780 Park Ave. N.W., Faribault, Minnesota

- ☐ I want to know more about Crystal Tips ice makers and their distributor profit opportunities.
☐ Send literature on Crystal Tips ice makers.

NAME _____

ADDRESS _____

CITY _____ STATE _____

circle 7 on reader service card

**"The Yellow Pages brought us
a lead which we turned into
a \$40,000 contract!"**

says Bob MacGregor, MacGregor Refrig. & Air Conditioning Co., Los Angeles, Cal.



Display ad (shown reduced) runs under AIR CONDITIONING CONTRACTORS. Call the Yellow Pages man at your Bell Telephone Business Office to plan your program.



"We ask customers how they found us. That's how we traced the \$40,000 contract to the Yellow Pages!"



"Our Yellow Pages program brings in approximately 35% of all our new incoming calls for service."



"All year 'round, our display ad under *Air Conditioning Contractors* and our 7 listings draw good business."



"We display the Yellow Pages emblem on our trucks to remind people where to find us when they want us."



Display this emblem. It builds your business!

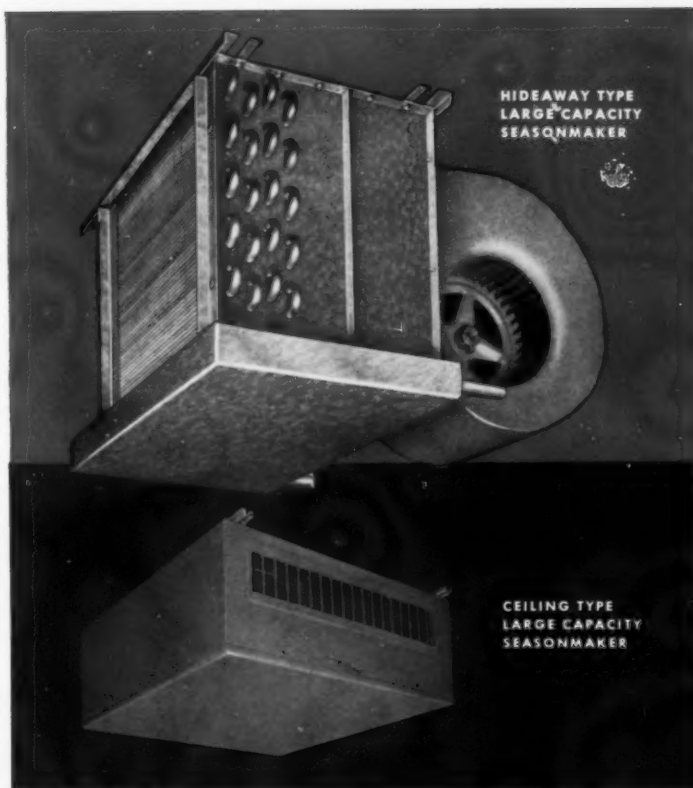
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**2 to 10 Tons
Capacity**



**USE THESE
NEW COMPACT
LARGE CAPACITY**

McQuay



Seasonmakers

TO AIR CONDITION ALL MEDIUM SIZED AREAS

When you air condition medium to large sized areas requiring from 2 to 10 tons capacity, compare new McQuay compact large capacity

Seasonmakers with all others. Compare the features...compare the quality...compare the quietness...and you will agree that McQuay leads the field.

- ★ Hideaway models in 4 sizes—800 cfm to 2000 cfm.
- ★ Ceiling models in deluxe cabinets in 4 sizes of direct drive and 5 sizes of belt driven units—800 cfm to 3000 cfm.
- ★ New low height and compact design.
- ★ Permanent split capacitor, resilient mounted motors.
- ★ Choice of five fan speeds.
- ★ Full rated capacity.

- ★ Available with 4 or 6 row cooling coils and 1 or 2 row steam or hot water heating coils.
- ★ Sloped, Styrofoam insulated drain pan.
- ★ Exceptionally quiet operation.
- ★ Rippled fin coil.
- ★ Money saving design for easy installation and minimum maintenance costs.

The McQuay representative in or near your city will gladly give you the complete Seasonmaker

story. Call him, or write direct to McQuay Inc., 1643 Broadway N. E., Minneapolis 13, Minn.

Available for immediate shipment

McQuay INC.

AIR CONDITIONING • HEATING • REFRIGERATION

circle 34 on reader service card



BUSINESS *Trends*

HOW OUR BUSINESS IS DOING

SALES IN JUNE (Bureau of Census) for airconditioning and commercial refrigeration equipment distributors, contractors, and wholesalers:

DOWN 10% from a year ago

UP 15% from previous month

SALES FOR 1961 so far are:

DOWN 8% from 1st 6 months a year ago

INVENTORIES IN JUNE (Bureau of Census) for airconditioning and commercial refrigeration equipment distributors, contractors, and wholesalers:

UP 6% from a year ago

UP 1% from previous month

NO BUSINESS FAILURES of airconditioning contractors were reported for **JULY** by Dun & Bradstreet. Compare this to:

1 failure with \$1,000 liabilities a year ago

1 failure with \$44,000 liabilities in June

GENERAL BUSINESS INDICATORS

	Latest Period	Previous Period	% Change
Housing Starts (thousands)			
Month ending 7/31/61	125.9	138.3	-8.9
New Construction , put in place (\$ billions)			
Month ending 7/31/61	5.4	5.4	No change
Unemployment (% of labor force)			
Month ending 7/31/61	6.9	6.8	+1.5
Manufacturers' Inventories (\$ billions)			
Month ending 6/30/61	53.4	53.4	No change
Manufacturers' Unfilled Orders (\$ billions)			
Month ending 6/30/61	45.7	45.8	-0.2
Retail Sales (\$ billions)			
Month ending 7/31/61	18.1	18.3	-1.1
Personal Saving (\$ billions)			
Quarter ending 6/30/61	25.8	23.7	+8.9
Disposable Personal Income (\$ billions)			
Quarter ending 6/30/61	361.8	354.3	+2.1
Gross National Product (\$ billions)			
Quarter ending 6/30/61	516.1	500.8	+3.1
Industrial Production Index (1957 = 100)			
Month ending 7/31/61	106	111	-4.5

Source: U.S. Dept. of Commerce

Commerce department offers services

You can take advantage of the multitude of services offered businessmen by the U. S. Department of Commerce, as the result of a multi-billion dollar research program. These services include aid in developing new products, as well as assistance in tapping resources of both foreign and domestic markets. Millions have been spent in gathering marketing data to meet a variety of business information needs. Material is so detailed that it includes a study of 750,000 blocks in 475 cities, as an aid to businessmen seeking a location for an industrial plant or retail outlet. This information is yours for the asking. Simply write to a commerce department branch office or directly to Washington, D.C.

25% of new apartments get controls

A quarter of all apartments built this year will be equipped with individual, tenant-controlled warm air systems, which can easily be adapted to provide optional summer cooling. This information comes from Clyde H. Wilkinson, president of American-Standard's airconditioning division, which recently made a survey indicating that 75,000 out of a possible 285,000 apartments would be so equipped.

GE Credit Corp. reports big volume

Industrial distributors, contractors, and original equipment manufacturers are making greater use of General Electric Credit Corp. (GECC) financing to help sell products, according to Charles G. Klock, GECC president. Last year's business volume of \$63 million doubled 1959 totals. John W. Stanger heads up a separate Commercial and Industrial Financing Business section to handle the increase. There are sales offices in 20 cities; headquarters in New York City.

NEMA figures show room unit increase

Sales of room airconditioners are up almost 40,000 for the first six months of 1961, according to National Electrical Manufacturers Association figures. Totals for 1961 are 1,199,800 units, compared to 1,159,900 for the January-June period last year. June sales this year were 233,800 units, down almost 4000 from 1960. First 6-month sales of dehumidifiers totaled 241,500 units, a drop from 302,000 for the first half of 1960. Dehumidifier sales in June, 1961 were 54,800 units, compared with 81,900 a year ago.

CAN A SINGLE MOISTURE INDICATING ELEMENT ACCURATELY SIGNAL DANGER IN BOTH REFRIGERANT 12 AND REFRIGERANT 22?



Of course it can't! And yet 4 out of the 5 manufacturers of moisture indicators have asked the refrigeration industry to accept the fact that one element can do the job...against all the rules of common sense and all the evidence of science. R-12 and R-22 have radically different characteristics and there's a big difference in how much moisture each refrigerant can stand before serious trouble develops in the system. Ansul's 200 "Dry-Eye" moisture indicators are the only ones that employ two separate indicating elements—one for R-12, one for R-22. The L-200 can be installed alone or with the new Ansul "System Boss" drier . . . the T-200 is designed for use with the unique Ansul "T-Flo" drier to create another complete moisture control system. Want scientific proof of what really happens when a single R-12 element is called upon to signal trouble in an R-22 system? Write and we'll send a research bulletin . . . or ask your refrigeration wholesaler. ANSUL CHEMICAL COMPANY, MARINETTE, WIS.



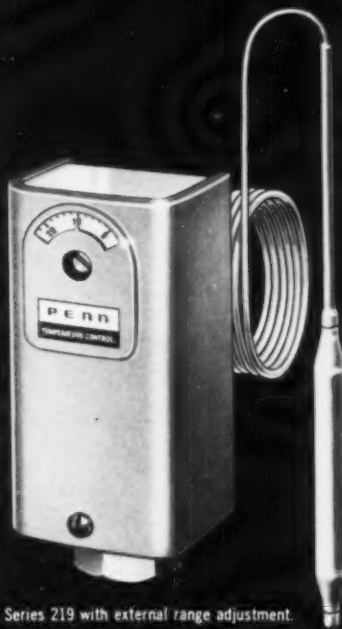
circle 12 on reader service card



Series 219 without external range adjustment.



Series 219 space thermostat with range adjustment knob and integral air bulb.



Series 219 with external range adjustment.

LOOK WHAT'S NEW IN REFRIGERATION TEMPERATURE CONTROLS



Series 239 has both external range and differential adjustment.

**Now! Compact size,
highly accurate
repeat performance,
plus other new
sales features!**

Here's a new line of small, compact, Penn refrigeration temperature controls which has a *wider range* of applications with *fewer models*. The Series 219 has a fixed differential while the Series 239 differential is adjustable. Rated at 16 Amps., these models feature extremely close differential, precision "repeat" accuracy, and are not affected by barometric pressure or cross ambient temperature problems. Extra features include built-in conduit fitting on Series 219, visible linear scale and small bulb size. Closed-tank fittings and bulb wells as well as built-in compensation for ambient temperature are also available. Learn more about these controls . . . write for Bulletin 3270.

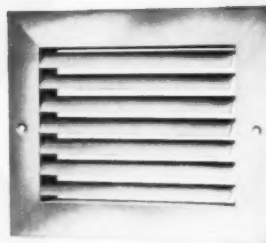
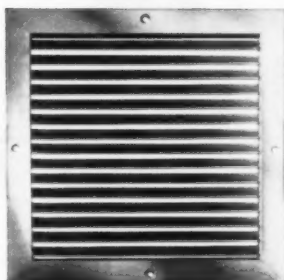
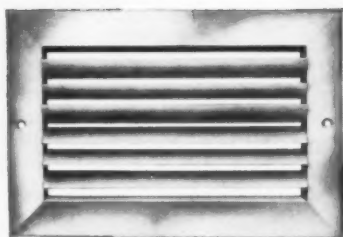
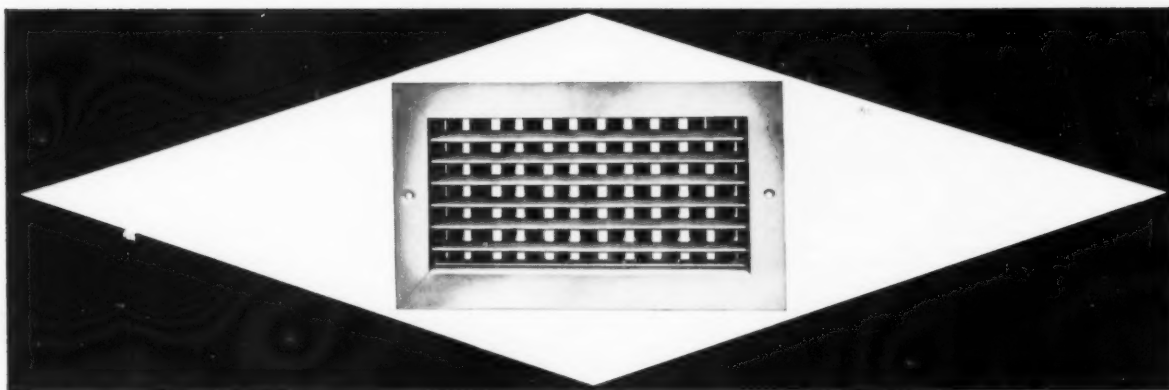
PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

STANDARDLINE

extruded aluminum grilles and registers
withstand even salt air environment

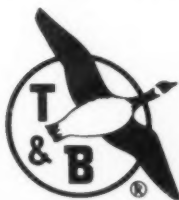


YOU CAN COUNT ON STANDARDLINE

grilles and registers to retain their "just-installed" appearance even in the most destructive environments. All parts are of extruded aluminum . . . far stronger than rolled aluminum . . . and are impervious to rusting, pitting, corrosion . . . even in salt air.

Surfaces are etched to a rich lustre and coated with a clear acrylic lacquer. The fine finish serves as a perfect base for color-matching grilles and registers to an existing decor, without fear of "bleed-through" or need for a prime coating.

There is a T&B STANDARDLINE grille or register designed to fill the bill for your jobs. For more information, call your nearest T&B Representative or write us direct.



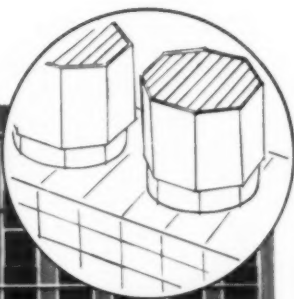
TUTTLE & BAILEY

Division of Allied Thermal Corporation
New Britain, Connecticut

Tuttle & Bailey Pacific, Inc., City of Industry, Calif.

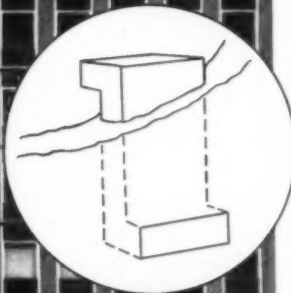
circle 57 on reader service card

From basement to roof top...Aircoustat® silences noise



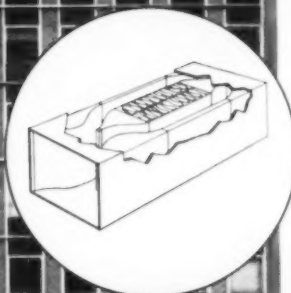
Cooling Tower Silencers

Water, fan and air noises are eliminated by Aircoustat Cooling Tower Silencers. Basic elements include intake sound proofing as well as exhaust mufflers. Because every building's requirements are special, every system is individually designed.



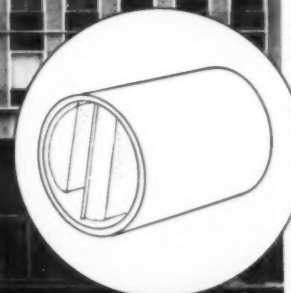
Return Air Vent Silencers

Block voices and other noises transmitted through transfer grills. Aircoustat Return Air Vent Silencers trap sound but not air. Available in three configurations and six stock sizes. Adaptable to a variety of installations—doors, walls, ceilings, etc.



Standard Duct Silencers

These low-cost, pre-engineered units assure a lifetime of trouble-free, maintenance-free service. Pre-determined values eliminate guesswork, *guarantee* the right attenuation. More than 60 stock models, fabricated in six lengths, available "off the shelf." No local job adjustments, no fabrication.



Circular Silencers

High velocity air system sounds need not be excessive if proper consideration is given to attenuation. An Aircoustat Circular Silencer adjacent to the fan does the job. Designed especially for higher pressure systems as well as for standard cylindrical ductwork. A full range of standard sizes available.

Selecting performance guaranteed AIRCOUSTAT units is quick and accurate. We'll be pleased to supply you with complete technical and ordering information on any or all silencers in the line. Write: KOPPERS COMPANY, INC., 3110 Scott Street, Baltimore 3, Maryland.



SOUND CONTROL

Engineered Products Sold with Service

circle 27 on reader service card

OCTOBER 1961/THE REFRIGERATION & AIRCONDITIONING BUSINESS

USEFUL Literature

SOUND AND VIBRATION ELIMINATOR. Catalog 890 covers the line of flexible, wire-reinforced rubber sound and vibration eliminators. Special sections discuss pipeline noise and vibration, noise and vibration control, water hammer control, product applications, and construction features. Two drawings show construction details. Size and dimension tables specify eliminators available for pipelines, and show permissible movement in flanged flexible eliminators and comparison of acoustical impedances. Product application photos and late information on other rubber products are here in a separate section. — *General Rubber Corp.*

circle 206 on reader service card

FURNACE AND HEATER ASSEMBLY. Brochures DFP-401, DF-220, EN6055B contain price lists for basic assemblies and optional equipment. Tables showing furnace drives, motors, and thermostats, and heater performance are included. Layout diagrams show dimensions of several heater models. A specification sheet describes cabinet blowers and filter cases, and contains a data table specifying motor horsepower, drive, blower rpm, and brake horsepower for system static pressures at certain cfm's. — *Reznor Mfg. Co.*

circle 207 on reader service card

CARBONATOR-COOLER. Bulletin T-507 describes and illustrates applications for the company's automatic carbonator and combination "carbo-coolers." Cutaway diagrams show models available for soda fountains, bars, icemakers, and automatic vending machines. Capacity data, installation suggestions, and dimensions are included. — *Temprite Products Corp.*

circle 208 on reader service card

TECHNICAL DATA BOOK. New release describes technical data bulletin 356, featuring the company's "Panelcoil" products, available to architects, engineers, designers, contractors, and fabricators. Sample pages from the bulletin and product application photos are included in the release. — *Dean Products, Inc.*

circle 209 on reader service card

VACUUM PUMPS, GAS BOOSTERS, AIR MOTORS. Catalog 561 gives data on several models of positive air pressure and high vacuum pumps, gas boosters, and air motors. Details of construction, dimensions, capacities, performance curves, plus engineering and installation data are included. — *Leiman Bros.*

circle 210 on reader service card

CAST COOLER PACKAGE. Form 8024A is a revised spec sheet on cast cooler packages "CCP" units. Sections on two models include features, ratings, dimensions, and electrical characteristics. Dimension diagrams are provided for each model. A chart showing pressure drop versus water flow and a section on suggested specifications complete the brochure. — *Dunham-Bush, Inc.*

circle 211 on reader service card

ELECTRIC HOT WATER BASEBOARD HEATER. Form E-150 explains the baseboard heating concept. Features principles of operation, specifications of floor models, and ratings and sizes of other models. Two installation diagrams are included in the bulletin. — *International Oil Burner Co.*

circle 212 on reader service card

Continued from page 82

MINIMUM INVENTORY— GENEROUS PROFITS

Service Air Conditioning Controls with
Identical Parts Used in Original Equipment



Only 20 starting relay kits will replace 355 various items.

Only 19 control relay kits will replace 142 various relays, contactors, controllers.

Same-day-shipment on parts ordered from RBM Chicago warehouse.

NOW! GENUINE

RBM REPLACEMENT KITS

For the first time, RBM offers kits for direct replacement of the magnetic controls it has engineered and built as original equipment for all major air conditioning manufacturers. Their requirements have been consolidated into a few replacement kits. This, plus same-day-shipment of orders from the Chicago warehouse stocks, keeps your inventory down. Because RBM original equipment and replacement controls are manufactured on high volume production lines, costs are low... and you benefit from the saving in generous profit margins.



Wholesalers... be sure and ask for a free supply of the new RBM pocket size REPLACEMENT KIT BROCHURE. Your customers will appreciate them.

Order your replacement kits from our Chicago Warehouse, 3501 W. Addison, Chicago 18, Illinois.



For technical information write or phone:

RBM Controls Division

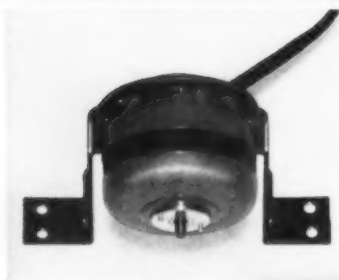
Logansport, Indiana

FACTORIES: North Manchester and Logansport, Indiana.

circle 44 on reader service card

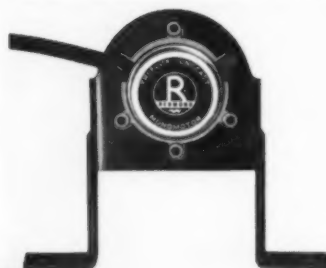
Completely Interchangeable **NEW** Accommodates

**THE NEW TYPE AM MONOMOTOR®
FITS EASILY INTO ALL MOUNTINGS AND BRACKETS**

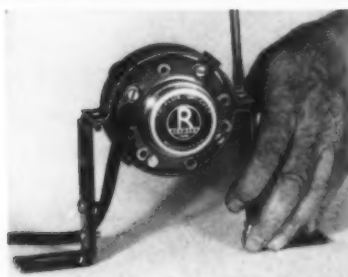


REAR MOUNTING

$\frac{3}{8}$ ths inch smaller diameter allows motor to fit right into bracket now in unit—no bending, squeezing, pinching.

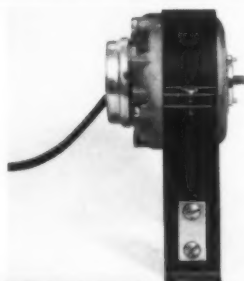


Fits all rear-mounting applications. 6 mounting holes make it easy to mount motor on the bracket.

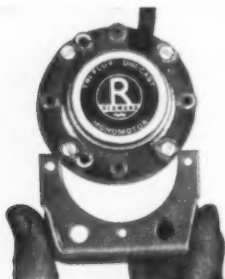


PERIPHERAL MOUNTING

You can easily replace motors with peripheral mounts or that are lug-mounted.



In a peripheral mount, the AM motor can be adjusted to any depth.



PEDESTAL MOUNTINGS

Pedestal bracket fits right over motor—note number of holes for affixing.



Pedestal bracket attaches easily in any of numerous combinations available.



**FREE
BROCHURE**

Type AM Catalog Page has complete information: dimension diagrams; model numbers; sizes; weights. Send request to Distributors Division, Redmond Company, Inc., Owosso, Michigan.

DISTRIBUTORS DIVISION

Redmond Condenser Fan Motor All Mountings



TYPE AM

These Features Make The New Single Bearing Type AM Your Number 1 Condenser Fan Replacement Motor

As you can see from the photographs at left, now you need to stock only this one motor to accommodate all mountings and brackets—rear, peripheral, and pedestal.

The diameter of the new Type AM MonoMotor® has been reduced $\frac{3}{4}$ ths of an inch, so it fits right into rear-mounting brackets without any bending or knuckle-busting. The smaller size and lighter weight make it easy to handle when you are working on a unit. And of course the fact that it is up to 25% lighter in weight than are competitive motors means real savings in shipping costs for you.

When you install motors that last, you get satisfied customers. Life tests prove that the Type AM has longer life than competitive motors. One of the reasons that the AM gives longer, trouble-free operation is the exclusive Redmond patented oil system, which provides more effective oil recirculation. The new AM has the best oil slingers in the industry. Redmond's patented features guarantee no oil leakage in use or in shipment.

Your customers will like the new AM MonoMotor® because it is whisper-quiet. Extremely close manufacturing tolerances combined with Redmond's patented controlled rotor end play feature eliminate the end play noise problems found in conventional motors.

All-angle operation is another feature of the AM—it is designed for all-position mounting, vertical shaft up, shaft down, or any angle.

Redmond

Company, Inc.

Subsidiary of

COOKSVILLE, ONTARIO • **CONTROLS COMPANY**

The Standard of Dependability

OWOSSO, MICHIGAN



OF AMERICA



• ZUG, SWITZERLAND

circle 46 on reader service card

THE REFRIGERATION & AIRCONDITIONING BUSINESS/OCTOBER 1961

ABOVE ALL THE SPORLAN *Catch-All*

with the Original Molded Porous Core
Introduced fifteen years ago...
Now the most widely acclaimed Filter-Drier!

Read this Original Sporlan Catch-All ad... published way back in January, 1947. Long before anyone else even thought of a molded porous core. A core that couldn't powder or pack, or let the refrigerant channel or by pass it. No one except Sporlan thought of filtering the refrigerant instead of straining it.



HERE IT IS!
the New
SPORLAN
Catch-All
FILTER
DEHYDRATOR

THE MOST PERFECT FILTER-DEHYDRATOR EVER DEVELOPED

COMPLETELY DIFFERENT IN DESIGN!

- The unique construction of the Sporlan Catch-All provides effective moisture and dirt elimination in refrigeration systems.
- The drying agent of the Sporlan Catch-All unlike other drying agents is a molded porous cylinder which both dehydrates and filters...

IT CANNOT POWDER! • IT CANNOT PACK!

For **Peak Performance** on all installations install a Sporlan *Catch-All* and take advantage of these extra features:

- The Sporlan Catch-All will reduce the moisture content in an average installation with Freon, Methyl Chloride or Sulfur Dioxide refrigerant to at least 40% below accepted commercial standards!
- The Sporlan Catch-All will catch all scale, solder particles, carbon, sludge, dirt or any other foreign matter as minute as 9 microns with negligible pressure drop!

SPORLAN VALVE CO.
3723 COMMONWEALTH AVE. • ST. LOUIS 17, MO.

Sporlan developed the now famous Catch-All filter-drier to meet the need of eliminating such problems as moisture, acid, sludge and other foreign matter in a refrigeration system. Today, through constant engineering research, its molded porous core is universally accepted as the foremost drying, acid removing and filtering agent for *all* air conditioning and refrigeration systems.

Only Sporlan offers you fifteen years of experience in the application of molded porous core filter-drier units.

Only Sporlan gives double activation... before and after assembly. Immediately after the final activation the unit is sealed with moisture-tamper proof seals.



**the most complete line of
filter-driers in the industry**

There's a Catch-All for every capacity from fractional horse power units to large capacity installations...

so, remember... if you want perfectly clean, perfectly dry refrigeration and air conditioning systems... buy Sporlan Catch-Alls, the Perfect Filter-Drier since 1947.

SPORLAN VALVE COMPANY
7525 SUSSEX AVENUE ST. LOUIS 17, MISSOURI
EXPORT DEPT., 85 BROAD ST., NEW YORK 4, N.Y.

circle 51 on reader service card

OCTOBER 1963 / THE REFRIGERATION & AIRCONDITIONING BUSINESS

**The refrigerants you want...
packaged the way you want them!
Take your pick!**



genetron 11 CCl_3F ORANGE LABEL TRICHLOROMONOFUOROMETHANE

genetron 12 CCl_2F_2 WHITE LABEL DICHLORODIFLUOROMETHANE

genetron 22 CHClF_2 GREEN LABEL MONOCHLORODIFLUOROMETHANE

genetron 113 $\text{C}_2\text{Cl}_3\text{F}_3$ PURPLE LABEL TRICHLOROTRIFLUOROETHANE

genetron 114 $\text{C}_2\text{Cl}_3\text{F}_4$ BLUE LABEL DICHLOROTETRAFLUOROETHANE

NEW! Get facts about "Genetron" 11 solvent in special pressurized cylinders for cleaning out mildly contaminated systems following burnout.



GENERAL CHEMICAL DIVISION

40 Rector Street, New York 6, N.Y.

circle 5 on reader service card

RECENT *Installations*

Connectors absorb piping noise

VIBRATION NOISE CREATED BY CIRCULATING hot water pumps stays in the boiler room where it belongs at Wyandanch, N.Y., high school. Flexible metal pipe connectors, one on each suction and discharge side, absorb the pumps' vibrations, thus preventing the noise from reaching classrooms via the piping system.

This system consists almost entirely of 5" schedule 40 piping, except for reducing ells which fit the pumps' 4" discharge outlets. The line circulates 200 F water at 280 gpm against a total head of about 76.5'. The flexible connectors, manufactured by Allied Metal Hose Co., make installation easy because they automatically compensate for misalignment between suction or discharge outlet and mating piping section. Also, no internal stresses are set up in the



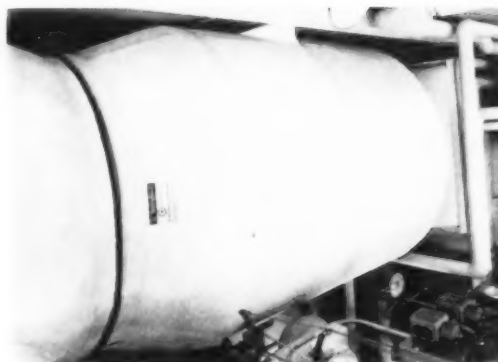
system and the connectors don't impose a twisting force on pump housing or bearings.

The 30" connectors are made of a corrugated stainless steel inner core with galvanized steel braided jacket. Connector ends are flanged, one being a floating flange for easy mating with pipelines.

Fan 81" long moves air at 26,000 cfm

INSTALLING a centrifugal return air fan only 81" long solved a serious space problem in airconditioning the new Coal Building, Washington, D.C. The fan, which has a 65" o.d., moves conditioned air at 26,000 cfm and is hung from a monolithic concrete slab in the building's boiler room, the only suitable place.

The "Centriline" fan is a space-saver because of an airfoil blade centrifugal wheel which al-



lows air to follow the blade contours closely to prevent noise-producing turbulence on the upper blade surface and to provide a highly-efficient air flow within a compact casing. Manufactured by Westinghouse Electric Corp.'s Sturtevant division, the fan is part of a high-velocity air heating and cooling system that consists of two coal-fired steam boilers, a 128-ton absorption unit, and a 34,000-cfm air handling unit with heating and cooling coils.

GE airconditions Texas' Alamo

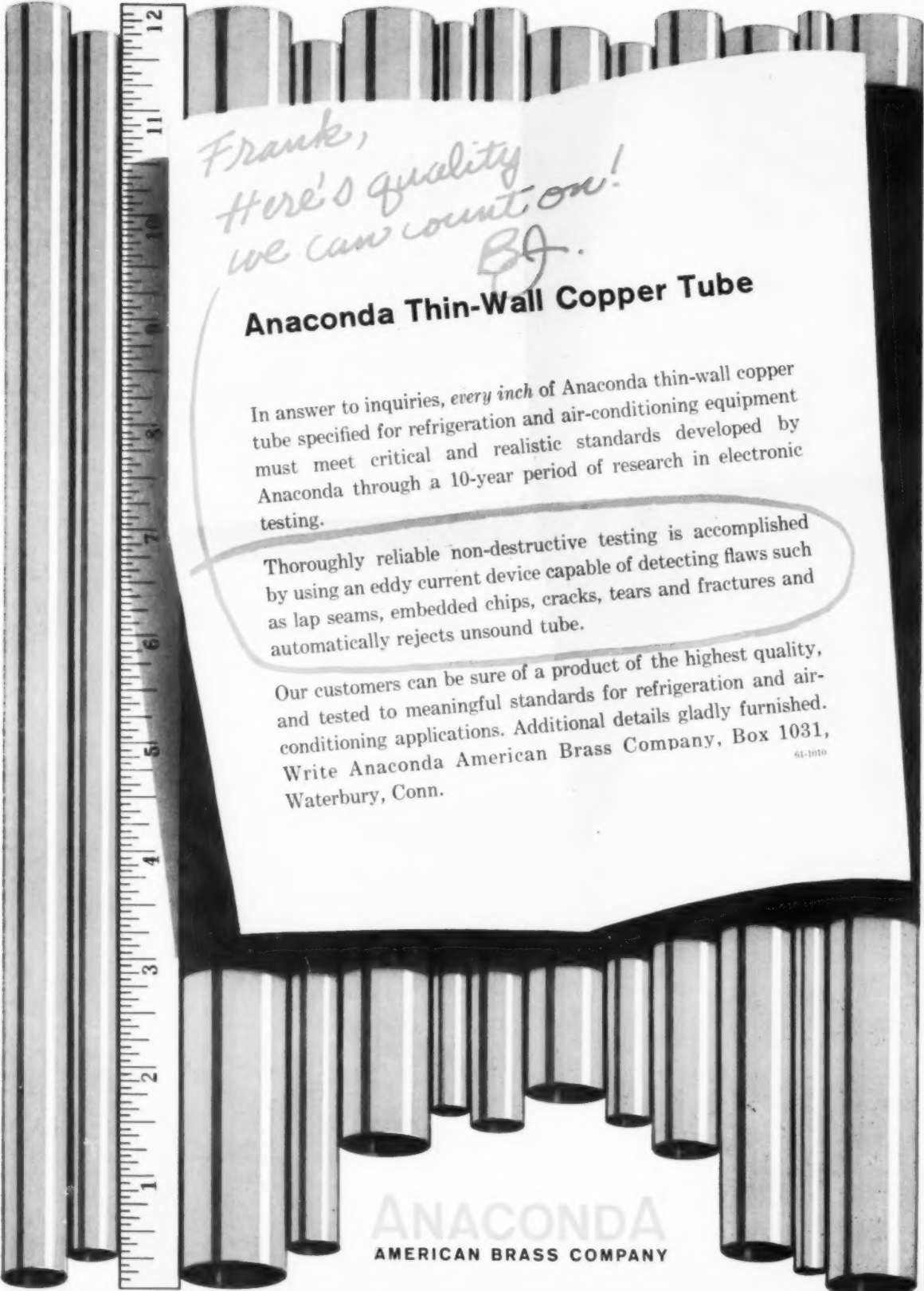
AIRCONDITIONING HAS TURNED BACK the clock at the Alamo, San Antonio, Texas, to keep its visitors comfortable. But very few of them will ever spot the artfully-concealed General Electric "Weathertron" units.

The cooling equipment had to overcome several problems. Biggest was to install it so it wouldn't add a jarring 20th century note to the shrine's rough-hewn interior. The other problems were how to heat and cool the high-ceilinged building with a 100-degree temperature span, and how to furnish enough capacity to contend with the thick stone walls which soak up heat and can't be insulated.

A pair of 4-ton units on the roof are concealed behind a parapet. Supply outlets for the air handlers extend through choir lofts, last used in 1793 and covered with 10" of dust, and aim at the Alamo's main room.

Heavy iron window grilles, typical of the 18th century, were duplicated and chemically aged to conceal the outlets. Another airconditioner is located in a small stockade that's topped by a thatch roof.

Continued on page 56



Frank,
Here's quality
we can count on!
BA.

Anaconda Thin-Wall Copper Tube

In answer to inquiries, *every inch* of Anaconda thin-wall copper tube specified for refrigeration and air-conditioning equipment must meet critical and realistic standards developed by Anaconda through a 10-year period of research in electronic testing.

Thoroughly reliable non-destructive testing is accomplished by using an eddy current device capable of detecting flaws such as lap seams, embedded chips, cracks, tears and fractures and automatically rejects unsound tube.

Our customers can be sure of a product of the highest quality, and tested to meaningful standards for refrigeration and air-conditioning applications. Additional details gladly furnished. Write Anaconda American Brass Company, Box 1031, Waterbury, Conn.

61-1010

ANACONDA
AMERICAN BRASS COMPANY

circle 10 on reader service card

Product DATA

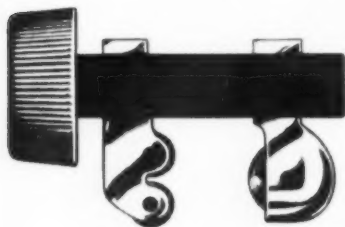
Restrictor tubing

After testing, lengths of certified tubing capped at both ends with heat-sealed plastic. Factory capping saves sealing operation by o.e.m. in sub-assembly stage. Produced in sizes from minimum of 0.072" od x 0.026" id to maximum of 0.172" od x 0.115" id. — *Kensico Tube Co. Div., Robinson Technical Products, Inc.*

circle 136 on reader service card

Tubing cutter

"Klos-Kut" tubing cutter that requires only 2" clearance from center of tubing regardless of tubing size. Both



cutter jaw and roller jaw move together so tool's overall length doesn't change within its cutting range of 1/8" through 3/4" tubing. — *Robinair Mfg. Corp.*

circle 137 on reader service card

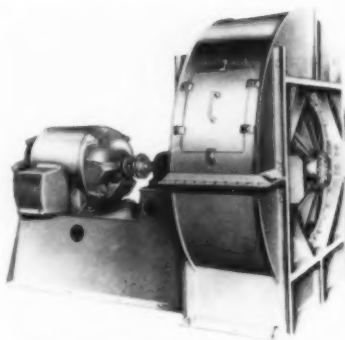
Stem thermometer

"Pandux" stem thermometer with anti-parallax dial, dial and pointer being in same plane. Base and butt of stem inert gas welded for high pressure use. Bi-metal element and drive rod are silicone damped to cut out vacillating readings where vibration encountered. Recalibration of thermometer done by loosening three screws and resetting head against known standard. Four ranges: -40 to 160 F; 0 to 220 F; 50 to 300 F; and 150 to 750 F. Over-range protection 50% for ranges up to 300 F and 10% for range to 750 F. Stem lengths are 2, 6, 9, and 12" including 1/2" npt connecting nut. Dial head is 3" o.d. and has 2-3/4" dial. All exposed parts stainless steel and units individually calibrated to within 1/2% over entire range. — *Pacific Transducer Corp.*

circle 138 on reader service card

Centrifugal fan

Series 8500 industrial centrifugal fan with airfoil blading for applications at direct-connected motor speeds where fan speeds or horsepower input exceed belt drive limitations. Has capacities of 15,000 to 450,000 cfm. Is available in five ac motor speeds — 1800, 1500,



1200, 900, and 750 rpm. Can handle air from -20 to 800 F. Bearings are integral with fan unit, and motor or turbine is direct-connected to fan shaft through couplings. Housings built for fixed discharge and split for wheel removal. Flanged inlets and outlets standard, but adjustable inlet spin vane control is optional. — *Sturtevant Div., Westinghouse Electric Corp.*

circle 139 on reader service card

Beer refrigerator

"Bar Mobile" roll-out draft beer refrigerator and dispenser. For use by caterers and restaurants at small-group service functions. The 6 1/2 cu.ft. electric refrigerator will hold 1/2, 1/4, or 1/8 bbl. beer kegs and up to 5 lb. capacity carbon dioxide tanks with regulators. Available with detachable, foldaway faucet that stores inside cabinet when not in use or with heavy duty air-cooled draft arm



and faucet. Has stainless steel service top, needs no plumbing, and has 1/2-hp hermetically sealed condensing unit. Requires 23 x 27" floor space and has standard cabinet of baked gray enamel. — *Beverage-Air Co.*

circle 140 on reader service card

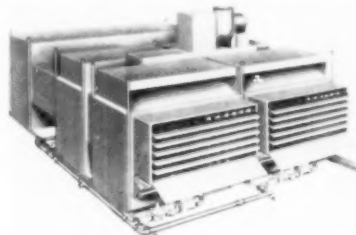
Refrigeration thermostat

Bulletin 9530 straight range and constant cut-in thermostat which combines lower internal operating forces and compactness. Has various adjustment and differential settings, end or side screw and end or side quick connection terminations. Range calibration spring replaced by system consisting of molded drive lever, contact reed, and flipper spring. These form fast make-fast break toggle switch mechanism which won't tease open when contact at or near zero-force condition. Minimum base assembly dimensions 1-17/32 x 1 1/4 x 1-11/64". — *Cutler-Hammer.*

circle 141 on reader service card

Heater assembly

"PAK Series" makes possible utilization of direct-fired gas equipment and consists of from one to four duct furnaces with packaged blowers, mechanical



flue exhauster, and control system. In capacities from 200,000 to 1,400,000 Btu input and in either push-thru or pull-thru arrangement. All components bolted to angle iron base. In push-thru arrangements, blower motors with frame size up to 215 enclosed within blower cabinets. Pull-thru requires blower cabinet with externally-mounted motor and blower shaft bearings unless entering air temperature below 140 F. — *Reznor Mfg. Co.*

circle 142 on reader service card

Air diffuser

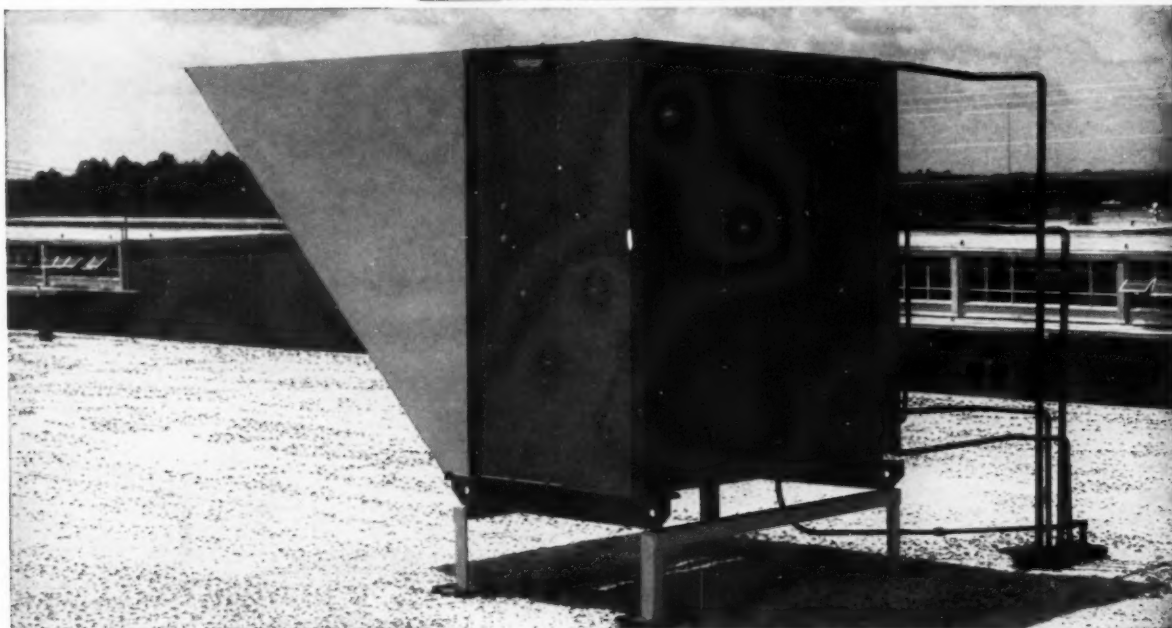
"Staccato" extruded aluminum linear air diffuser. Louvers recessed at regular intervals with intervals varied according to desired design. This highlights series of short-spaced dashes along each louver on dark background. Face of raised sections in brushed satin aluminum, rest of louver in anodized black finish. In two basic types: standard with 7/32 x 3/4" louvers spaced on 1/2" centers; "Fineline" with 1/8 x 3/4" louvers spaced on 1/2" centers. In many types of extruded aluminum borders, widths, and lengths. — *Titus Mfg. Corp.*

circle 143 on reader service card

Continued on page 68



WORLD'S LARGEST FARMERS MARKET USES **LARKIN ZEPHYRCONS**



BFC-16 on guard—one of more than 50 Larkin Zephyrcon Air-cooled Condensers at the Georgia State Farmers Market. A full range of both FCs and BFCs are used, many with multiple circuits.

Value-Packed Features

- Direct-drive FC models—for economy and easy maintenance.
- Belt driven BFC models—for larger installations, lowest noise level.
- Patented Larkin cross-fin coil—aluminum fins and staggered copper tubes.
- For use indoors or outdoors.
- A single large fan on BFC model assures low operating noise level.
- Motor on BFC model is standard NEMA design mounted on adjustable base.
- Slow speed motor on FC model is permanently lubricated, has overload protection, and is mounted on resilient base.
- Casing is of heavy-gauge steel.
- Unit finished with baked-on epon-base primer and melamine top coat for maximum protection.
- Motor is enclosed in casing, protected from the weather.
- Discharge shield available.
- Fan guard is standard equipment.
- Return bends protected by heavy-gauge shield.

At the world's largest farmers market the products are protected from the ravages of hot weather with the help of Larkin Zephyrcon Air-Cooled Condensers. More than 50 Zephyrcons provide ample condensing capacity for the big market's refrigeration systems which employ over 200 Larkin high and low temperature humi-temps.



See your wholesaler
or write for Bulletin 1031-C



circle 30 on reader service card

HERE WE GROW

VIKING adds primary plant

How do you produce the best product of its kind in the world? The answer is simple — through controls — controls, every step of the way, from its beginning to its end. For it is through repeated controls that demand perfection in production that you approach perfection in the final product.

Now, Viking Copper Tube has achieved the last step in the control of its thin-wall copper tube — the addition of a brand new primary mill. Built for its special purpose and equipped with the very latest and finest electronically controlled tools and machinery designed by Viking Engineers, this mill will fashion from pure electrolytic copper billets the best copper tube the refrigeration and air conditioning field has ever seen. Next time you are in Cleveland, you are cordially invited to see this great step in Viking's continuing growth.



VIKING

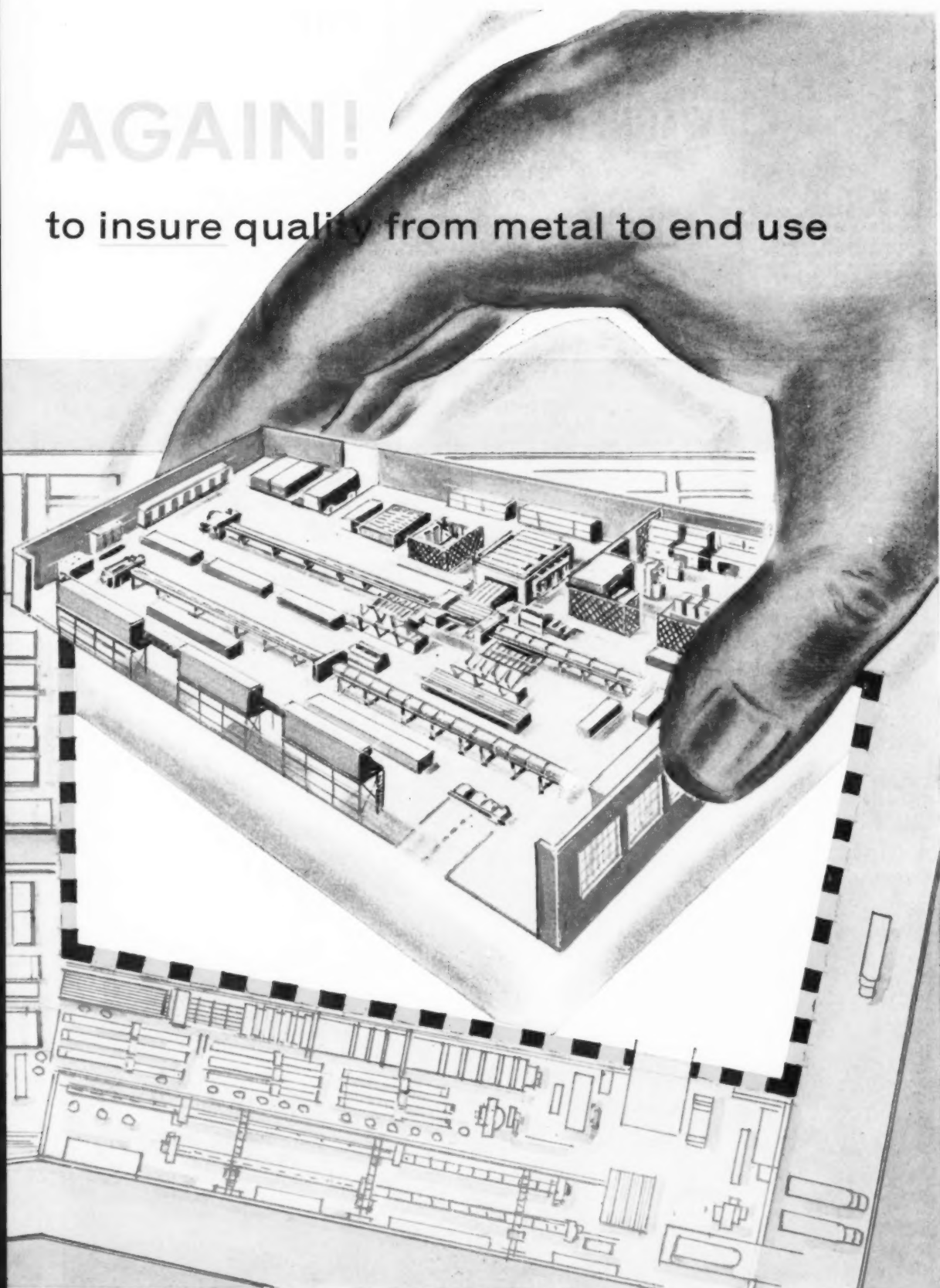
VIKING COPPER TUBE COMPANY

SUBSIDIARY OF CERRO CORPORATION

16600 ST. CLAIR AVENUE
CLEVELAND 10, OHIO

AGAIN!

to insure quality from metal to end use



circle 59 on reader service card

NO STARTING PROBLEMS

with

WAGNER CAPACITOR-START MOTORS

Pack more power into less space...give long troublefree service...are easy to hook up

Here are general purpose single-phase motors that have high starting torque and high pull-in torque. When used in the proper application and supplied with voltage close to their rating, they'll give positive starts every time. Troublefree operation is assured... thanks to the positive action of the Wagner governor mechanism and long life quick-break switch.

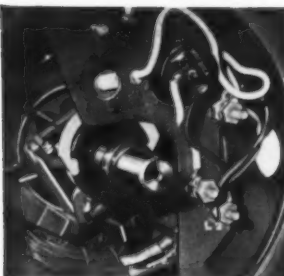
Wagner Type RK Motors pack more power into less space. Small enough to fit in tight spots, their ruggedness is built-in... permits direct mounting. They are available in a range from 1/4 through 5 horsepower, with sleeve or ball bearings, and with rigid bases or resilient mountings. And, sleeve bearing fhp models can be operated in any position.

Get these motors from leading distributors in your city, or from Wagner Sales Offices in 32 cities across the country. Your Wagner Sales Engineer will be glad to help you select the right motor for your application. Wagner Bulletin MU-217 gives full details on Capacitor-Start Motors.

Wagner Electric Corporation

6442 PLYMOUTH AVENUE, ST. LOUIS 33, MO., U.S.A.

Manufacturers of LOCKHEED® Products



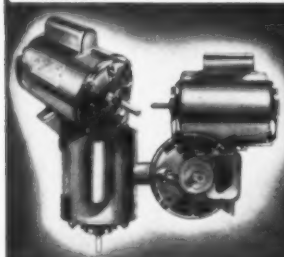
Quick Break Switch

The starting winding is disconnected from the line by this Wagner designed switch... test proved to make more than a million breaks. (That adds up to two starts per hour for 50 years!)



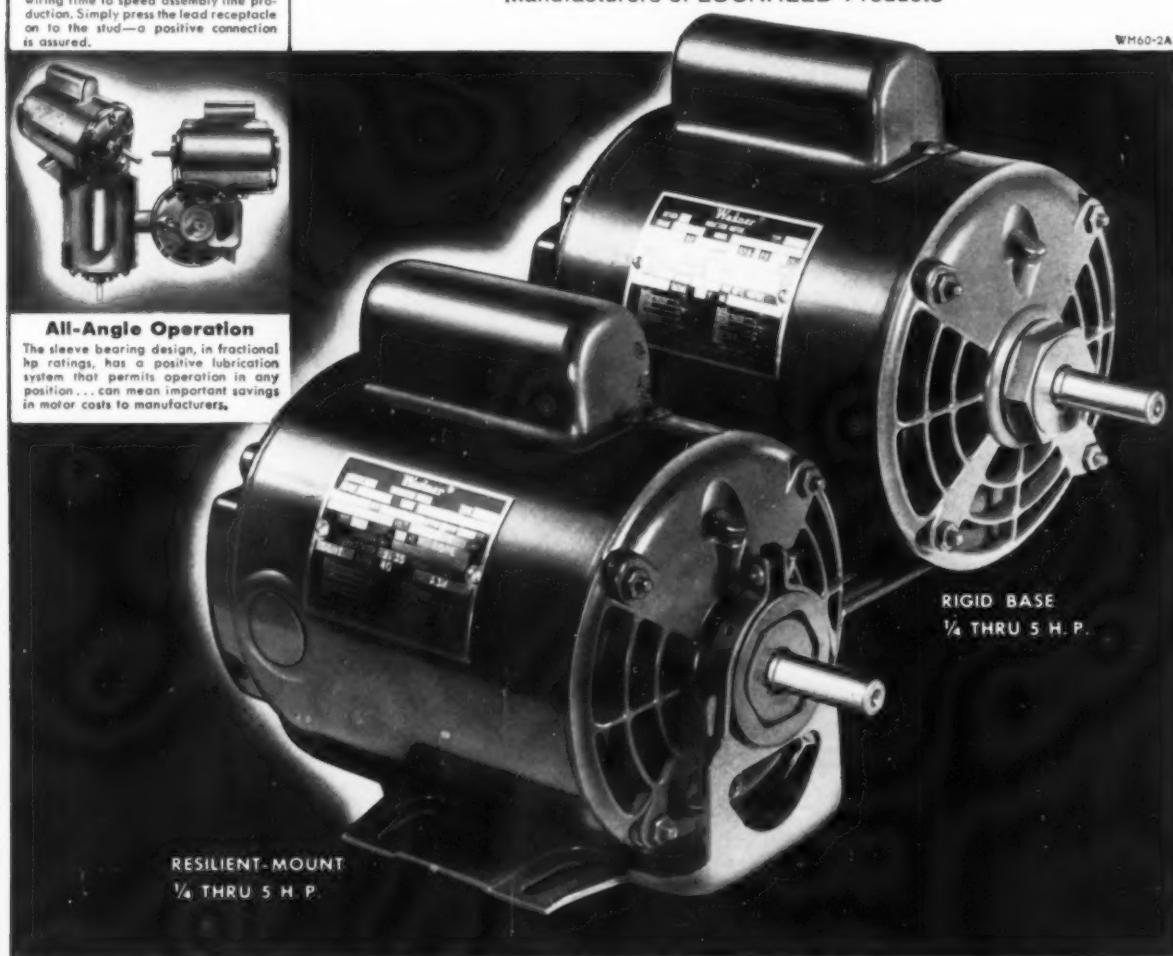
Quick Connect Terminals

Brass tabs on terminal studs permit quick, easy connection of leads... cut wiring time to speed assembly line production. Simply press the lead receptacle on to the stud—a positive connection is assured.



All-Angle Operation

The sleeve bearing design, in fractional hp ratings, has a positive lubrication system that permits operation in any position... can mean important savings in motor costs to manufacturers.



RESILIENT-MOUNT
1/4 THRU 5 H. P.

RIGID BASE
1/4 THRU 5 H. P.

WM60-2A

circle 63 on reader service card

LET'S TALK *Business*

Civil defense needs your participation

THIS IS NOT INTENDED as a scare editorial. We don't want to be tagged as alarmists. But it's silly not to face up to reality. And the simple fact remains that the national civil defense organization, with operational headquarters in Battle Creek, Mich., has shifted into high gear operation.

We sincerely hope, as you do, that civil defense activities will never need to go beyond the planning stage. But we can't duck the chance that they *may*. If this time comes, your talents and capabilities as an installing contractor-dealer will be vitally needed.

During the formative years of our country, the great need was for men with a trade, such as blacksmiths or carpenters. This is true today with most of the newly formed nations of the world. Under nuclear attack our highly complex civilization would again have much of this same basic need. That's where you fit in.

It's no secret that our industrial mobilization leaders are implementing plans for key industries to go underground. Civil defense authorities are stressing the fact that your family and mine would find their greatest safety underground, too.

This proposed movement of large masses of people underground indicates a high priority for the specific talents of our industry. Any such underground areas, to be habitable for prolonged periods of time, would need ventilation, heating, cooling, and humidification control. Food preservation and the storage of certain medicines and other critical supplies would require refrigeration.

You and your organization can be an important part of our civil defense effort. Contact your local civil defense office and tell them what capabilities you can offer. Explain that you wish to register and make your organization available in case of need.

Don't be afraid of being dragged into periodic civil defense drills. Right now the civil defense organization isn't interested so much in you or your employees as individuals as it is in the capabilities you can offer as a group. The reason is simple — and bone-chilling. They just have no way of predicting who is going to be left when the dust clears.

The strongest deterrent to aggression we can offer is our willingness to stand in readiness for whatever the future may bring. By making yourself and your organization a part of civil defense planning you will lessen the likelihood that this planning will ever have to be put into practice.

Jack Robinson

Why bother participating in industry activities?

H. T. JARVIS, *chairman, ARI's 12th Exposition Committee*

BUSINESS BACKGROUND:

President, Recold Corp., which he founded in 1932. Started in refrigeration industry in 1927, selling household refrigerators for Whittier, Calif., furniture store. With his brother, became distributor for electric refrigerators in 1929.

INDUSTRY ACTIVITIES:

A member of Air-Conditioning and Refrigeration Institute for many years. Has served as a leader of West Coast activities. Named chairman of ARI's 12th Exposition Committee in 1960.



THINK OF AN INDUSTRY SHOW as you would a political convention. Just as a convention revitalizes a political party, an exposition or trade show is healthy for an industry. The enthusiasm generated by such a show serves to reaffirm and upgrade the confidence the industry has in itself.

Political parties must depend on conventions to keep this enthusiasm burning for four years. But we have industry shows to rekindle our enthusiasm much more often.

In recent years, the wisdom of having an industry show has been questioned. Participation in some expositions has lagged and the need for these national shows has been continuously under close scrutiny by participants, exhibitors, and sponsoring trade associations.

Big industry shows cost plenty in terms of time as well as money. But cost should not be the only factor involved. The emphasis should be placed on value.

It's as difficult to measure the exact value of participation in industry activities and expositions as it is to measure the value of literature, advertising, or any other sales expense. But that there are certain advantages to such participation cannot be denied.

What are they?

Membership in trade associations, whether by an individual or an organization, broadens the viewpoint of the member by:

- (1) Permitting a better understanding of the industry, and
- (2) Making possible a thorough self-evaluation through the eyes of that industry.

Participation in trade shows does something no other mass sales media can do. It brings the potential customer and the product together under one roof.

The prospect can actually see and inspect equipment that interests him most. He invariably comes away confident that he has convinced himself of the relative merits of competitive lines. He feels he has made this judgment without the influence of unsupported sales claims.

The exhibitor, on the other hand, benefits by finding out first-hand how his customers and prospects feel about his products and his policies. He also finds out how they feel about his competitors' products and policies.

The real challenge is to take full advantage of the benefits offered by participation in these industry activities, and through positive action to translate these benefits into increased profits which must be the ultimate measure of their value.

INGVAR MONSEN, *president, Monsen Refrigeration Service, Bloomfield, N.J.*

I OWN A SMALL CONTRACTING FIRM serving the northern New Jersey area. But next February I'll travel all the way to the West Coast and spend a week in Los Angeles to attend the ARI Show and take part in the national convention of Refrigeration and Air Conditioning Contractors Association.

You can bet I wouldn't be spending either the time or the money for this trip if I didn't sincerely feel that what I'll learn will help me run my business more efficiently and more profitably.

Where else could I get so much valuable knowledge in one place and in such a short time? I know from past experience that before the week is out I'll be bubbling over with enthusiasm generated by all I'll see and hear.

I know I'll be impressed again with the wide variety of products on display — the products from which I make my livelihood. I know I'll welcome the opportunity of discussing new developments and thrashing out old problems with the capable factory people manning the exhibits. I know I'll profit by the opportunity of comparing notes with contractors from other arts of the country.

I'll take an active part in the RACCA meeting, not just because I'm a national director but because I have long recognized that there's a big difference between simply joining an organization and actively participating in it.

Sure, it's easy just to sign up, pay your dues, then sit back and wait for the association to go to work for you. But you really won't get your money's worth this way. If you want to profit fully from your membership, you must be willing to share your time and your talents as well. Do this and you'll find, as I have, that the benefits you get out of the association are in direct proportion to what you put into it.

E. PETER SORENSEN, *president, Air-Conditioning and Refrigeration Wholesalers*

AT EVERY LEVEL OF OUR INDUSTRY — manufacturer, wholesaler, contractor-dealer — you'll find those who are successful, those who just manage to get along, and those who fail.

What's the big difference between them? One of the keys that opens wide the door of success or locks tight the gate of failure is an awareness of what's going on in the business.

No businessman can be an island unto himself. Inevitably he is influenced and guided by what his customers think and what his competitors do.

You can't be fully aware of these vital factors affecting your day-to-day decisions unless you participate in industry activities over as broad a range as possible. This means attending national trade shows, as well as local or regional product displays and educational sessions. It also means taking an active part in industry associations.

You'll get a chance to do both at Los Angeles next February. At the 12th National Exposition of the Air-Conditioning, Heating & Refrigeration Industry you'll be able to see and feel the new products on display. You'll be able to sit in on sessions of one or more of the half dozen industry associations that are holding their meetings in conjunction with the Show. You'll have a chance to exchange views with customers, suppliers, and competitors, to profit by their knowledge and experience.

All too often I've heard this comment: "The only people who come to the shows are the successful ones. How come we can't get the others out so we can make them aware of what's going on in the business about them?"

This seems to be one measure of difference between success and failure. Which way are you heading? ♦



BUSINESS BACKGROUND:

First experience in the industry was in 1934, specializing on installations of ammonia equipment. Organized Monsen Refrigeration Service in 1948 and has headed this New Jersey contracting firm ever since.

INDUSTRY ACTIVITIES:

Director-member of RACCA of New Jersey since 1950; vice president, 1957; president, 1958. Now a director of RACCA-National.



BUSINESS BACKGROUND:

Founded Airo Supply Co., Inc. Chicago wholesaling firm, in 1929, and has served as its president ever since. Also formerly president of Airo Supply Co. of New York, and of Utilities Engineering Institute, a Chicago trade school.

INDUSTRY ACTIVITIES:

Elected president of Air-Conditioning and Refrigeration Wholesalers for 1961. Also serves as director of Region 6. A trustee of National Association of Wholesalers.

Make your plans now!

ARI Show promises four full days

THERE'S LOTS FOR YOU to do and see at the 12th Exposition of the Air-Conditioning, Heating and Refrigeration Industry Feb. 12-15, 1962, in Los Angeles.

Officials are cramming the 4-day period with plenty of activities, so the expected crowd of 15,000 won't have many minutes to spare.

More than 85% of exhibit space has been sold.

It's all part of "Air-Conditioning and Refrigeration Week, that coincides with Air-Conditioning & Refrigeration Institute's bi-annual exposition.

What's out in LA for you?

National meetings. If you are a member of Air-Conditioning and Refrigeration Wholesalers (ARW), Refrigeration and Air Conditioning Contractors Association (RACCA), Refrigeration Service Engineers Society (RSES), or Western Air Conditioning Industries Association (WACIA), your group's convention is scheduled there that week.

Exhibits. You'll be able to see the latest in products at the more than 300 exhibits in LA's spacious Great Western Exhibit Center. Show director George E. Mills points out that a wider range of products will be shown.

"These products," he says, "are not only those produced by the industry, but those produced for the industry. Many firms signing up for space have never been represented at an ARI exposition before."

Mills says there are two reasons for this.

First, this is the first ARI show on the West Coast. Many firms doing business primarily in this area have an opportunity to exhibit for the first time in a national show.

Second, heating equipment is included in an ARI show for the first time.

Educational and discussion sessions. Committee chairman Arthur J. Hess of the host Western Association reports that 90% of the speakers have been confirmed for the 11 meetings. These sessions start Sun-

HERE'S A LINEUP OF SESSIONS

Sun., Feb. 11, 1:30 p.m.

... for service engineers

"Evacuation of refrigeration systems preparatory to charging"

"Maintaining dry refrigeration systems"

"Condenser water treatment"

"Insulation of piping systems"

Mon., Feb. 12, 9 a.m.

... panel on airconditioning loads

"Calculations and considerations of loads on existing buildings installing airconditioning"

"Solar load"

"Lighting load"

"New residential calculating form"

Mon., Feb. 12, 2 p.m.

... on phases of business

"Taxes"

"Credit"

"Salesmanship"

"Accounting forms" (tentative)

Mon., Feb. 12, 2 p.m.

... for junior engineers

"Equipment vibration control"

"Selection of V-belt drives"

"Selection of electric motors"

Mon., Feb. 12, 7 p.m.

... symposium

"Heat pumps"

"Absorption units"

Tues., Feb. 13, 9 a.m.

"Use of refrigeration as anesthesia"

"Airborne bacteria control for operating rooms"

"Climate control for schools"

Tues., Feb. 13, 9 a.m.

... for heating contractors, engineers

"Pumps — selection and other problems"

"Boilers"

"Controls"

Tues., Feb. 13, 2 p.m.

... panel discussion on inter-industry relations

Wed., Feb. 14, 10 a.m.

... panel discussion for contractors

"Bidding practices"

Wed., Feb. 14, 2 p.m.

... for airconditioning contractors and engineers

"High-velocity duct work"

"Attenuating boxes"

"Conduit systems"

Wed., Feb. 14, 2 p.m.

... for refrigeration contractors and engineers

"Low-temperature refrigeration"

"Defrosting methods — industrial systems"

"Thermoelectric refrigeration"

day afternoon, Feb. 11, and continue through Wednesday afternoon, Feb. 14.

A tentative lineup of session topics is on this page.

Entertainment. Plans are being coordinated by Thom Muir, executive director of ARW, working with other industry representatives.

A President's Reception will kick-off activities Sunday night, Feb. 11. An Early-Bird's Breakfast, featuring speakers and entertainment, is slated for the following morning.

An informal All-Industry Roundup will be held Tuesday night, Feb. 13, to be followed by an All-Industry Mardi-Gras the next night.

Events being planned for the women include a style show, a 6-hour trip, and tours of stars' homes. ♦

ON AIR CONDITIONING BIDS —

Who gets the job — when the customer says no?

RON HENRY, *associate editor*

PLENTY OF AIRCONDITIONING CONTRACTORS get sore arms from patting themselves on the back. They boast that they get 50, 60, or even 70% of the small commercial jobs they bid.

But don't ask them about the jobs they *didn't* get. If you get any kind of an answer at all, it'll be some hocus-pocus about competitors cutting prices.

I tracked down several jobs contractors told me they didn't get. Before I started out, contractors told me, "You'll probably find my price was too high."

This made it sound like these contractors could have captured some of these jobs by shaving profits a bit. But I wasn't satisfied that this was the real reason. To get the full story, I went straight to the customer and found out why he didn't buy from the contractor who originally quoted the job.

Only three times out of seven did the customer buy from another contractor. In four of the cases *the customer didn't buy at all*.

Price isn't always the reason

When you're selling small commercial jobs, most of the time you're talking to an individual who can say yes or no. Often the customer doesn't bother taking competitive bids. Then why do you lose out?

"Our price was too high." That's what contractors told me. And they are right! But their price wasn't too high because another contractor's was lower.

Their price was too high because they hadn't con-

vinced the customer that airconditioning was worth that much. Of the seven customers I talked to, only three actually bought airconditioning from another contractor. Four decided not to buy at all.

When I asked them why, they came up with a collection of weak excuses. But the real reason they didn't buy was that they weren't sold on putting that much money into airconditioning. In each of the four cases, the contractor either failed to sell the merits of airconditioning or gave up too soon. In the remaining three, there was at least one legitimate reason for losing the job.

Put yourself in the customer's place. You call a contractor out to your store and ask him how much airconditioning will cost. He confuses you with a world of strange terms—Btus, cfm's, high and low pressures, heat gains and losses.

Does *that* sell you on airconditioning? Of course not. But the contractor isn't finished with you yet. The proposal comes next.

It states that you need a 7½-ton unit. Then it lists all the equipment required for the installation. And in the lower right-hand corner there's a dollar sign followed by some figures.

Does *this* sell you? Most contractors feel it should. He has offered you a good installation at a fair price. And most contractors stop selling at this point. Several told me why:

Continued on page 38

WHO GETS THE JOB?

"By the time we make an initial call, then spend time drawing up a proposal and deliver it, we've put as much money into selling this job as we can afford.

"Our slim profit margin prohibits making repeated trips to sell a couple thousand dollars worth of equipment. Another call or two and we'd end up doing the job at a loss."

Spend time selling benefits

There's a lot of truth in that. But from what I learned from the people they tried to sell equipment to, they would have increased their chances of getting the job if they had spent more of their time selling the *benefits* of airconditioning instead of sticking strictly to job requirements and equipment features.

So what happens? The customer gets his bid, but decides to "hold off for awhile." Doesn't the customer know airconditioning can help his business? Sure he knows it. But will it help him any more than the new counters someone tried to sell him yesterday? Will it help more than the fancy new store front he's been thinking of buying?

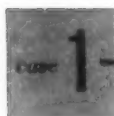
Remember this. You aren't just competing against other airconditioning contractors. You must compete against every salesman who walks through your customer's door. And you must convince him that airconditioning is a better investment than some other improvement.

Whether it's a retail store, an office, or a shop, you've got to sell, not only against other contractors, but against other new products and services.

You must sell the *benefits* of airconditioning. And that's not what is being done.

The following case histories point this out!

If you recognize yourself in some of them, you must start correcting this weakness before you can reduce the number of jobs you *don't* get.



Job: Gift shop

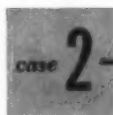
Location: Arcade, shopping center

Contractor told me: "Our bid of \$1700 for an air-cooled airconditioning system was turned down on price alone."

Customer told me: "If airconditioning costs that much, I don't need it. It's too much to ask me to spend almost \$2000 for the 10 or 12 days each year I really need cooling. When they bring prices down to what I think is reasonable, I might buy something."

Conclusion: Here's a customer that just wasn't sold on airconditioning, even though it was needed. The day I called there, it was hot and muggy. And the door was wide open. The contractor missed out here by not doing a selling job on the advantages of cooling. He didn't tell

the owner that the cost could be written off in two or three years as a business expense; what it would mean in customer comfort; or that the system would be in use far more than 10 or 12 days.



Job: Florist shop

Location: Brick shopping center

Contractor told me: "We bid the same type of system he bought, and at a lower price."

Customer told me: That's true, I did buy the unit at the highest price. But I've always believed that you only get what you pay for. I was impressed with the firm's reputation, and the salesman seemed to know more about his equipment. The contractor who didn't get the job couldn't offer me service facilities."

Conclusion: Here's an example of the reverse twist on price. What can the contractor do when he's low bidder and still loses out? Not much. In this example, however, the low bidder might think seriously about adding service work to his business.



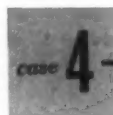
Job: Machine shop office

Location: Industrial area

Contractor told me: "We submitted alternate bids for cooling, dehumidification, and air filtration. The first, for \$800, called for three 1-ton room units. The second, for \$1450, included a 3-ton unit with a water regulating valve and eight air discharge registers. He didn't buy either."

Customer told me: "We are leasing this building and don't want to put that much money into airconditioning."

Conclusion: This customer wanted cooling, but didn't feel as though he wanted to spend the money while leasing. Did the contractor suggest leasing the equipment? No. Here's where the contractor might have been able to move the same equipment by selling the customer on the advantages of leasing. (See "To lease or not to lease" in our July issue.)



Job: Bridal shop expansion

Location: Brick shopping center

Customer told me: "Two of the three salesmen that came to see me bid comparable equipment, but one price was higher than the other. I picked the lower of the two because I figured I was getting more for my money. He also promised me good service. The third salesman could

have probably sold the job since I was impressed by his ideas and enthusiasm. But I never had a chance to see if his ideas worked — he never came back."

Conclusion: There was more than just one loser on this job. The "high-priced" bid lost on just that basis. The man who never returned permanently damaged his firm's reputation in the eyes of this owner. Then there's a hidden loser — the contractor who installed the original system for this owner. When the shop was expanded to twice its present size, he wasn't even contacted. Why? The original airconditioning unit was a constant source of trouble and the shop owner swore he'd never let that contractor work for him again.



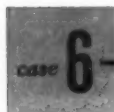
Job: Bar-restaurant

Location: 1-floor frame building

Contractor told me: "I don't know why we lost this one. In fact, I don't think he bought an airconditioning unit from anyone else."

Customer told me: "This is a small business, and we don't get enough summer traffic to warrant spending all that money for airconditioning."

Conclusion: It's entirely possible this owner could have been talked into buying airconditioning. He thought enough about it to get bids from contractors, but then backed down when confronted with the price. A contractor missed the boat here when he didn't sell airconditioning on the basis of increasing summer trade by offering a cool place to sit, relax, have something to eat and drink while watching television. I'm sure a contractor could have presented this tavern owner with enough statistics to prove that airconditioning in comparable businesses have resulted in increased profits. This owner still wants airconditioning and some smart salesman is going to get him to buy.



Job: Beauty salon

Location: 1-floor frame building

Contractor told me: "We made two calls on this customer, plus a follow-up by telephone, but we still lost it. Our price was \$1900 for a 7½-ton airconditioner."

Customer told me: "I'll tell you why they didn't get my business — they miscalculated heat gain in my shop. They figured the heat load with all dryers going at once, all lights on, and my shop full of people. That doesn't happen during the summer, since it's my slack season. I don't need to aircondition for maximum conditions. But every contractor except one told me I needed a 7½-ton unit."

"A friend recommended another contractor. He said a 5-ton unit would do the job, and it has. It's plenty cool in here. In fact, I have to keep it turned low because the women complain it's too cool when they're sitting around with wet hair."

"The contractor who sold me my new unit didn't insult me by telling me my old unit was junk and wasn't worth anything. You know, if you've paid good money for something, you don't like being told it's junk. He allowed me \$150 for the old unit, so I got my new 5-ton unit for \$1650."

"I got super service, too. After the contractor quoted me a price of \$1800 (less the \$150), he didn't raise it when I told him I would need the new unit installed within 24 hours — in time to meet a Saturday rush."

Conclusion: What's our contractor up against here? A darn good selling job by a late-comer who sells the shop owner the right package at the right time. And ties the ribbon in a pretty bow with his offer of a trade-in. The fact that the contractor promised to deliver the goods on short notice, I believe, clinched the job.



Job: Beautician school

Location: 2nd floor, brick building

Contractor told me: "Owner turned down our bid for a 10-ton water-cooled packaged airconditioner with two 5-ton hermetically-sealed compressors. Our price was \$3694. He told us he didn't have enough money to rewire for 3-phase which was needed for this system. Rewiring would have had to run from basement to the second floor."

Customer told me: "Bids were ridiculous. Two were over \$7000, with sheet metal work costing \$2000 itself. From talking around, I believe I could solve my problem without rewiring by using about six window units and perhaps a 3-ton unit. But no contractor even mentioned this."

Conclusion: Contractor gave up on this one too fast. When customer did not want the central system, contractor should have suggested an alternate method. The owner told me he'll shop around next spring for window units. He could have been sold window units this year, but no one tried. ♦

This first-hand field report is one in a series of exclusive staff-researched and staff-written articles aimed directly at solving industry problems. Be sure to look for others as they appear in THE REFRIGERATION & AIRCONDITIONING BUSINESS.

He finds leasing pays big dividends

SCHOLER BANGS, *western editor*

"ANY CONTRACTOR-DEALER of refrigeration and air-conditioning equipment not showing 25% of creative sales as leases is missing 25% of his market. And he doesn't have to be a big dealer to lease effectively."

That's what John L. Stewart, Jr. told me. He spoke not only from experience as president of Ocean-Side Air Conditioning of Oceanside, Calif., but as president of Palomar Leasing Corp., which will lease anything from an airconditioning system to an airport.

"Leasing is ideal for a one-man operation," Stewart said. "It opens new ways for his customers to finance and it attracts customers who don't have enough money to purchase what they need."

As president of Palomar only a fourth of his business comes from leasing airconditioning and refrigeration. But 35% of his sales at Ocean-Side, a franchised dealership, are on lease.

No set size for leases

Leases come in all sizes and shapes for Stewart. They can be as complex as one he wrote for cooling a chain of 19 bowling alleys in Los Angeles and Palm Springs. Or they can be as simple as an \$1800 job to aircondition a clothing store.

Sometimes a lease can be a life saver for the cus-



tomers. This was the case of a Southern California builder who built 21 new homes. He wanted to air-condition them, but didn't have the money. Surrounding homes were airconditioned.

Stewart took the builder's personal guarantee, supported by the value of the dwellings, and assigned 14 heat pumps and seven chilled air units on lease to Ed De Flavio of De Flavio Enterprises.

Stewart faced an unusual situation in the bowling alley venture. All 19 alleys were under a single holding corporation, but each was operated separately. "I had to write 19 leases, each backed by personal guarantees of officers beyond normal corporate guarantees. I installed equipment ranging from 2-ton heat pumps to 100-ton central units," Stewart told me.

How does Palomar Leasing differ from a national leasing agency, I asked him.

"We can be far more flexible. We can adjust terms and interest rates to meet a special situation. And we negotiate on a highly personal basis."

"Palomar isn't bound by a big black book of rules — only by good banking practice and the corporate laws of California. But we don't lease to everyone. Of the 300 to 400 lease applications that come to us each year, we write about 60."

"Our leases average five years with monthly payments of \$22 for each \$1000 of equipment value. We

JOHN L. STEWART, holding blueprint, discusses airconditioners he leased to builder Ed De Flavio to help sell 21 new homes.

don't take leases for seven or ten years very often since we like to write leases for 50% of the normal life expectancy of the equipment.

"We never include an option to purchase. On a 5-year lease for an airconditioning system, for example, we will include a renewal option, after which we renegotiate the lease by offering new equipment.

"If a customer wants to buy when his lease is up, we will only sell upon approval by the Federal Tax Board of Review. On airconditioning equipment, the price may range from 1½% to 20% of the lease price.

"We don't always demand credit references. Sometimes the net worth of a business doesn't equal the value of a proposed lease. But, if we are convinced of the integrity of the lessee and feel that his business offers good potential for re-leasing, we will be inclined to accept the application.

"Our leasing charges for lease values up to \$50,000 are fairly firm. Beyond that, we negotiate rates.

Expects to lose 2%

"We don't take on obligations for warranty, service, or payment of personal property tax when we lease equipment. This applies to our dealer company as well as Palomar. But we do designate who will service the equipment we lease and we dictate terms of the service contract.

"At Palomar we anticipate a 2% dollar loss of all leases we handle. But we've never had one go bad yet.

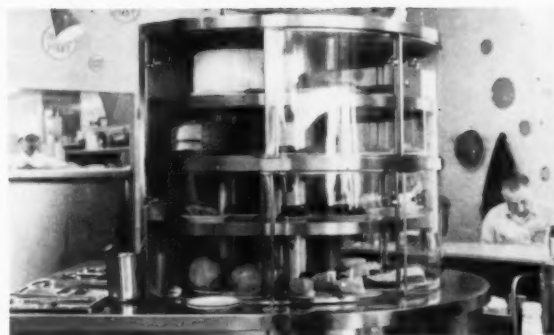
"Our smallest airconditioning lease was for \$1800; the largest, \$60,000. Since most supermarkets can't meet our rigid requirements, we have not written any leases for them."

Stewart feels a lease meets a long-standing need in airconditioning sales and serves as a companion to the conditional sales contract, rather than a competitor.

He explained it to me this way: "If we see that a customer will be better off buying outright, we don't push the lease. Many times after we discuss the customer's particular problem, we decide this is the best choice."

Do the activities of Palomar freeze out small airconditioning equipment dealers?

"No," replied Stewart. "It helps them by giving them a selling advantage they never had before in moving equipment. If they can't handle a lease themselves, they can come to us for help. So it helps the many small, growing companies to expand. It creates a cash flow impossible to find elsewhere, even in banking. It is making capital a true commodity with a high turnover." ♦



Custom case pays off for contractor, customer

WHEN A STANDARD FOOD CASE doesn't do the job, a custom case will often pay off in extra dollars for both you and your customer. A case in point: the contractor sold a custom-built refrigerated desserts case costing \$3000 to a new restaurant. His sales approach overrode the price factor by emphasizing the case's efficiency and attractiveness.

The Copper Penny Restaurant, Lakewood, Colo., consists of a circular service counter seating 22, a dining room for 75, and drive-in facilities for 200 cars. Its leaders in both dollar volume and per unit profit are such perishable desserts as whipped cream and ice cream pies, whipped cream cakes, custard and cream-filled pastries, and fruit pies. So a case for these baked goods had to keep them fresh and be visible to customers and accessible to employees.

These were the factors the contractor, Vic Molitor of Stainless Equipment Co., Denver, had to consider. A special customerized case was his answer.

The result is a 4 x 4 x 4' cylindrical case that fits the counter layout. It contains four levels (three shelves and the bottom) which can display up to 200 desserts behind 12 curved plastic sliding doors. Originally, Molitor considered using curved glass, but it wasn't available. It turned out to be a lucky break, though, because the plastic doesn't cloud up with condensation as glass does.

The case perches on top of a 5½ x 4 x 3½' stainless steel cabinet which houses the case's refrigeration equipment and two reach-in compartments for reserve stock pies and salad ingredients.

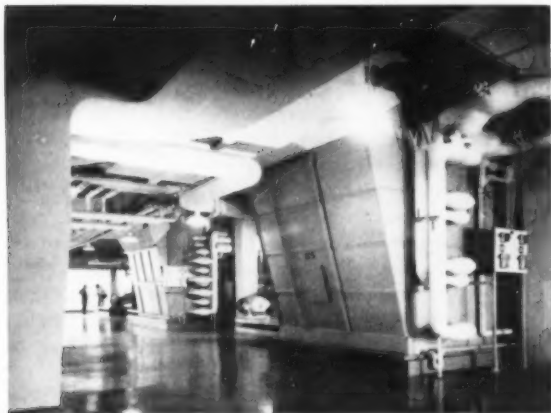
A ½-hp unit and a coil in a plenum chamber midway along the inside of the cabinet make up the refrigeration system. Cold air circulates at 800 cfm through the reach-ins and up through a center duct to return to the plenum for recirculation through the case. Temperature inside the case is kept at a constant 38 F.

Because of the case's plastic doors and its central location, desserts can be easily reached by waitresses and seen by customers. In fact, its sales appeal has been so great that owner John Osborn says that his dessert sales are now 2½ times those of another restaurant that uses a standard case. ♦

Preassembled units speed installation for ALL-GLASS BUILDING



THE VAST AIRCONDITIONING equipment needed to cool the L-O-F Building included large return air fans (above) and dual-duct air conditioners (below), which were installed on the 14th floor.



How WOULD YOU aircondition a 15-story building with an exterior that's 90% glass? There are probably a lot of answers, but here's the one that was used to cool the Libbey-Owens-Ford Glass Co. building in Toledo, Ohio: six high pressure airconditioners, four serving the perimeter offices and two to cool the building's core area.

The new office building is of curtain wall construction. Its outside walls consist of 1120 fixed windows; each is double-paned insulating glass and is 10 x 5½. Heat-tempered connecting spandrels are 3 x 5½.

Each side of the building is a separate zone that is served by a high pressure airconditioner which supplies cooled air to the induction under-window units. The building's core area is served by the dual duct units which are on the 14th floor.

The six American-Standard airconditioners contain integral cooling coils which use water that is chilled by two 600-ton chillers in the building's basement. These units deliver conditioned air at 168,900 cfm and have a total cooling capacity of 685 tons.

Other airconditioning equipment used in the job includes utility sets, steam unit heaters, and large return air fans.

Until a few years ago, high pressure systems had fans in cooling-heating coils furnished separately. They were mounted in casings provided on the job by the sheet metal contractor.

In the L-O-F installation, however, the fan-coil units were preassembled. This reduced installation time greatly by eliminating on-the-job placement of components and a large amount of sheet metal work.

Another interesting facet of this job was that the double-paned windows reduced cooling needs by 92 tons and thus the initial cost by \$55,200. They also cut operating costs \$2190 for airconditioning and \$5030 for heating requirements.

Stanley Carter Co., Toledo, was the installing contractor. ♦

"PLUS FEATURES HELP SELL THE ALL NEW . . ."

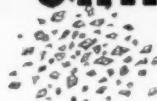


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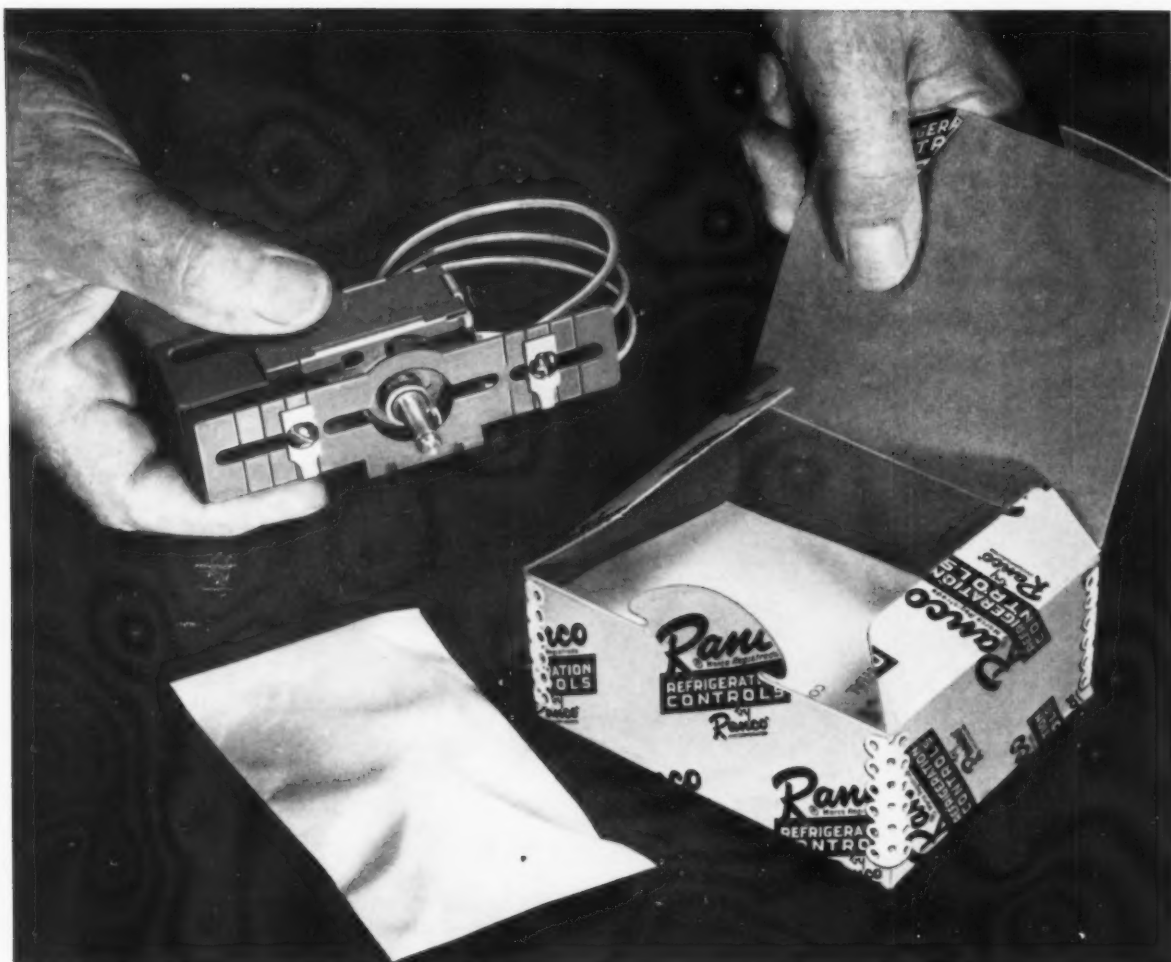
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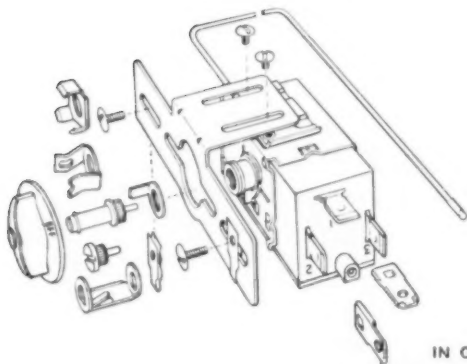
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OCTOBER 1961/THE REFRIGERATION & AIRCONDITIONING BUSINESS

Service Clinic FOR CONTRACTORS

A MONTHLY TRAINING GUIDE AND REFERENCE FILE FOR YOUR SERVICE DEPARTMENT

You must know more than Btus to keep service customers happy

MR. CONTRACTOR:

Watch for the Service Clinic every month. Its buff-colored pages make it easy to find. Pull out the complete section and pass it on to your installation and service department. The material in this section is especially selected, written, and edited to help these men do a better job.

RALPH WILKINS, *manager, dealer service*
Refrigeration Sales Corp., Cleveland, Ohio

It's PRETTY DIFFICULT to stump a good serviceman. That is, unless a customer starts asking questions that are outside the realm of your mechanical experience. When this happens, you can't go to your tool box or service manuals for the answer.

Every installing contractor-dealer of refrigeration and airconditioning equipment should make sure his servicemen are capable of answering these "stumpers." It's up to you, as a serviceman, to be prepared to answer in a way that will keep the customer happy with you and your company.

What are some of these questions? Here are four typical ones:

- "Why does a service call cost me so much?"
- "You were here just last week. Why won't it work?"
- "This never has worked well. What's wrong?"
- "Can't you send me a bill? Why do I have to pay you now?"

The answers you give to these and similar questions must satisfy the customer. If he isn't satisfied, it might be your last visit there. It might be the last time you or any member of your company has a chance to answer any question for him.

Continued on page 46

MR. SERVICEMAN —

How would you answer these

Continued from preceding page

You are put on the defensive the moment a customer asks questions. It's up to you to put aside your technical skills and become a first-class diplomat.

How can you answer questions on service costs, call-backs, product quality, and collection policies? Only by being prepared. Here are some answers I've found to work best:

Why does a service call cost me so much?



When you are asked to justify service charges and repairs, you must first of all prove to the customer that you know what you're doing. If you are slow in diagnosing the trouble, then spend most of your time changing parts or guessing what the trouble is, the customer soon loses confidence in your ability to do the job.

A well-trained serviceman will make a prompt and accurate diagnosis by using proper testing equipment and relying on his training. Then his ability in making repairs will show the customer he knows the score.

If a serviceman is thoroughly workmanlike at his job, he can easily explain, step-by-step, what he did and why he did it. And if he parallels this verbal description with a written check list showing what was done and how much each item cost in terms of parts and labor, so much the better.

But when the customer is just plain unhappy about the hourly rate, you face a test of your business know-how. You must understand what costs back up the minimum charge, travel time, and productive time, and be able to explain this to the customer in terms of dollars.

You must explain, as one businessman to another,

that it costs plenty to keep a company going. You must be able to talk intelligently about —

Advertising costs — This advertising may have been what prompted the customer to call in the first place.

Salary of personnel — For the telephone operator who took the customer's call; for the dispatcher who sent you on your way; and for you.

Overhead — Costs of keeping service trucks running and in good condition; costs of maintaining a repair shop; and costs of keeping a complete parts inventory.

Training — Service manuals and text books for servicemen.

Warranty — Guarantee given by the contractor covering workmanship and materials used in making repairs.

Miscellaneous — Taxes, depreciation, and improvements.

Send me a bill. Why do I have to pay you now?



When a contractor makes the serviceman responsible for making collections for service calls, he must realize there will be times when the customer won't have enough money to make full payment on the spot.

Servicemen learn from experience how much certain repairs cost. If a job looks as though it will cost more than normal, you can alert the customer to this.

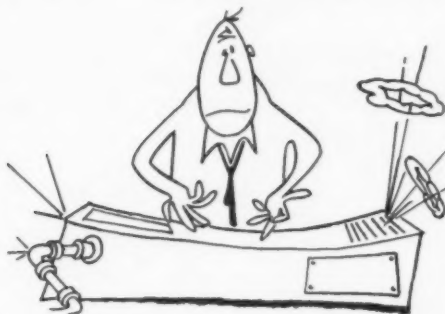
This gives the customer the chance to decide to either invest in fixing up old equipment or to replace it. If he decides to replace later, your company has its foot in the door for the order.

customer queries?

But if the customer decides to repair what he has, you can tell him he can make credit arrangements with the contractor before work starts. This places the important decisions squarely with the customer, and gives him every chance to cooperate with you.

But if you don't tell the customer how much the bill might be, you stand a good chance of not making a satisfactory collection.

This never has worked well. What's wrong?



This question comes up as the result of repeated service calls which aggravate the customer no end. The serviceman ultimately decides that the trouble lies in equipment design or in some production problem. He feels he can never correct the trouble to the customer's satisfaction.

But you must avoid questioning the customer's judgment in purchasing the equipment. Instead, you must assure the customer that his choice was sound, but that the solution to the present problem will have to come from the manufacturer.

Rather than have the customer contact the manu-

facturer direct, you might offer to contact the firm's distributor, branch office, or factory. There's a good chance the manufacturer already has an established procedure for correction.

The customer will appreciate your interest. It also gives the manufacturer the chance to work with you, who understands the problem, rather than attempt to solve the problem by corresponding with the customer.

This way you are the key person in coordinating the transaction. If the manufacturer is unable or unwilling to help, the customer won't hold you responsible.

You were here just last week. Why won't it work?



You face two possible solutions when your customer feels a call-back is the result of incorrect repairs.

Either the second call can be attributed to an initial incorrect diagnosis or faulty repair, or,

The second call is entirely unrelated to the original trouble, although the symptoms seem to be the same.

In the first case, you have only one course of action — face the facts, admit your mistake, and be sincere in your effort to make the correction as promptly as possible. Thank the customer for bringing it to your attention, since any effort to alibi or transfer blame will only compound the trouble. The customer will respect this and be more agreeable to future business.

However, if the second call is not related to the first, your job is different. Go over the first work order completely, pointing out what was wrong and what was done. Then explain the present difficulty.

"After all," you might say, "there are many different, and unrelated, reasons why a car doesn't run. You can't guarantee a car will run tomorrow just because you replaced a worn-out battery today." ♦

Look for these Service Clinic articles in coming issues:

- How to clean electric motors
- How to service TVX systems
- How to use a snap-around volt-ammeter
- More tips on water treatment

Service Level method helps select most economical V-belt drives

HOW WOULD YOU GO ABOUT SELECTING the most economical V-belt drive for any particular application?

Reaching for the nearest belt catalog or design manual wouldn't help you much, because usually these publications just show the horsepower ratings of belts in relation to the sheave diameter and the shaft or belt speeds. This means that the ratings are based on some standard life for all belts of a certain type. In other words, if a belt transmits the specified horsepower under the stated conditions it is considered to last this standard life.

Industrial type multiple V-belts are normally considered to have a standard life of three to five years. Until recently, however, it has been difficult to predict the actual life which might be expected from a specific drive.

Now, with information developed by Gates Rubber Co. and included in its belt catalog, it is possible to relate the drive conditions with service life through computation of a factor called the Service Level.

Service Level is usually expressed as a percentage. A 100% drive is one which corresponds directly to the data in the manufacturer's catalog. This is the same as the standard life already explained. A 50% Service Level indicates that the drive will give one-half of the standard industrial service; a 200% drive will give double this service.

Obviously, the accuracy of the Service Level figure depends on the accuracy of the appraisal made of actual drive conditions, such as starting torque and peak intermittent loads. The presence of harmful en-

vironmental factors beyond the control of the designer also must be considered.

The following example shows how you can use the Service Level to evaluate the economics of two drive possibilities.

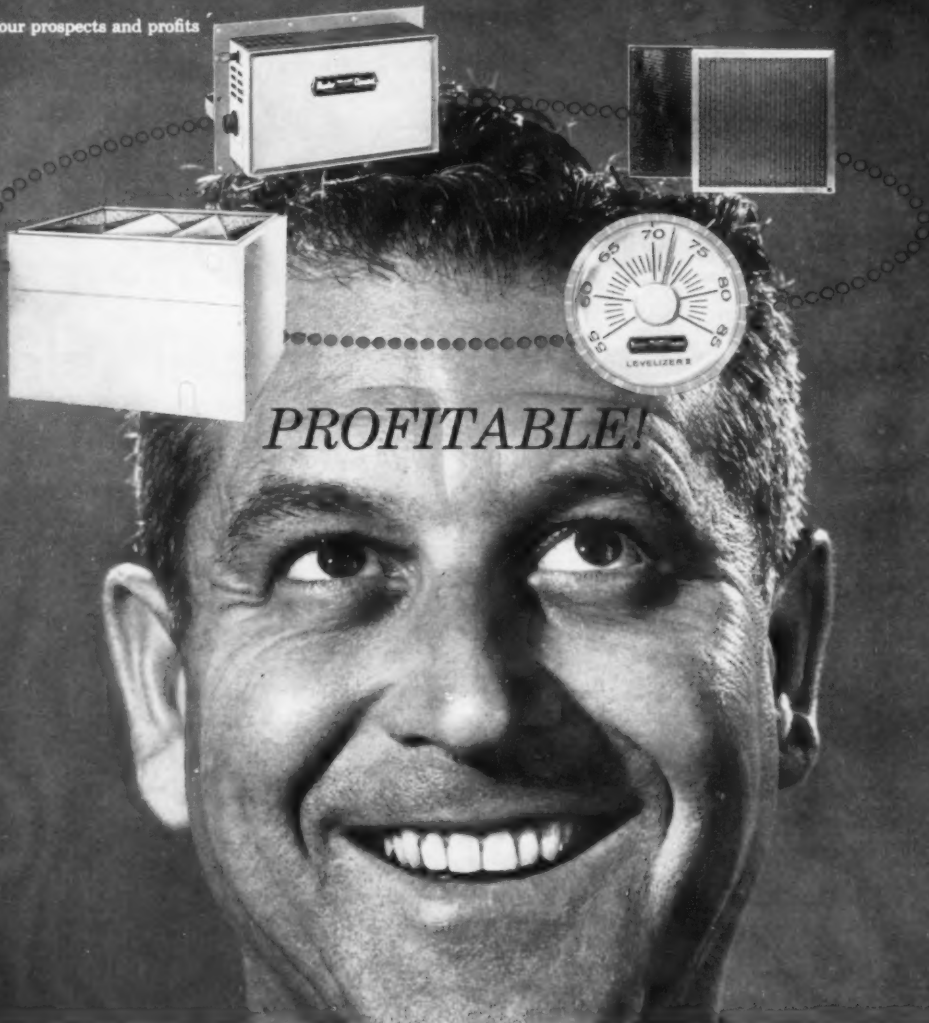
Example: Assume that both driver and driven sheaves operate at 1750 rpm, and design horsepower figures out to be 60 hp. The job calls for Model X belts running on 9" o.d. sheaves. According to catalog horsepower ratings, this drive requires 3.55 belts to carry 60 hp. This means that 3.55 belts would provide a 100% Service Level. But obviously the drive will have to use either three or four belts. Service Level calculations in the manufacturer's catalog indicate that three belts will provide a 33% Service Level, and four belts a 200% Service Level. Which drive will give the most economical service over a 10-year period of operation?

If you assume that 100% Service Level equals three years service, you can make a comparison like that shown at the bottom of this page. These figures dramatically demonstrate how costly it can be to skimp on a V-belt design. In this example, a "saving" of 21% on the cost of the original drive actually will cost your customer nearly three times as much over a 10-year period because of the far shorter service life of the 3-belt drive compared to the 4-belt drive. And this does not include the expense of down-time required to change a set of belts. ♦

Sheaves	Belts	Initial Drive Cost	Replacement Belt Cost Per Set	Service Level	Belt Sets in 10 yrs.	10 yr. Cost	Avg. Cost Per Year
3-9"	3-Model X	\$105.35	\$46.35	33%	10	\$522.50	\$52.25
4-9"	4-Model X	\$133.80	\$61.80	200%	1.67	\$175.21	\$17.52

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THE REFRIGERATION & AIRCONDITIONING BUSINESS, OCTOBER 1961

Applications MANUAL

HUGO C. SMITH, consulting editor, refrigeration

SYSTEM CAPACITY GRAPHS — your guide to proper coil selection

DON'T FALL INTO THE T.D. TRAP when selecting coils for refrigeration applications. Temperature difference (t.d.) alone is unreliable as a guide. The only safe way to select the proper coil and condensing unit, combination for any specific Btu load is on the basis of total system capacity. A simplified method of doing this is presented in the graphs on pages 51 and 52.

The temperature difference method of selecting coils first came into popular usage in the early 1930's. It is relatively simple to use, but its very simplicity has led to some abuses in its application.

For example, a coil selected at 10° t.d. costs more than one selected at 15° t.d. So the boys who engineer with dollar signs in their eyes will pick the coil at 15° t.d. And because the average customer is inclined to believe that the greater the horsepower the better the job, the refrigeration engineer is tempted to go light on coils and oversize the condensing unit, just to impress the man who is paying the bill.

As a result, it is not unusual even today to find jobs balancing off at 20° t.d. In fact, I recently encountered a florist box job that actually was operating at 25° t.d. The contractor who installed it had increased the size of the condensing unit twice, and the box still wasn't holding the proper temperature.

Each time he increased the condensing unit size, the system operated at a greater t.d. This resulted in a lower back pressure. Total system capacity was increased by only a small margin with the change from a ½-hp, to a ¾-hp, and finally to a 1-hp condensing unit. All this on a coil that was undersized in the first place.

To make matters worse, the original equipment on this job was supplied by the manufacturer of the box, so the customer believed he was getting a factory engineered job. You can imagine what he thought of the manufacturer when all the trouble started!

The system capacity graphs accompanying this article will help you quickly and easily select the proper coil and condensing unit combination for any load. The intersections of the coil curves (shown in color) and the condensing unit curves (shown in black) indicate the total system capacities at the balance points for various combinations of equipment.

The graph on page 51 covers condensing unit sizes from ½ to 1½ hp. The graph on page 52 covers condensing unit sizes from 2 to 7½ hp.

Here's how to use these graphs

Suppose you are figuring a 10 x 16 x 9' box, for heavy service, having a load of 12,000 Btu under 90 F ambient conditions. Find this load on the bottom scale of the graph on page 51. Follow this line straight up to the 10° t.d. line. The intersection of coil and condensing unit curves nearest to this point indicates that a 1½-hp condensing unit and a coil with a basic rating of 1180 Btu would be the wisest choice for this application.

The chart on page 52, covering the larger systems, works exactly the same way. For example, suppose you are figuring a 14 x 22 x 9' cooler having a load of 23,650 Btu under 100 F ambient conditions. Let's assume that it is a cut meat room and you want to balance the job at 10° t.d. Locate the load on the bottom scale of the graph, then follow this line straight up to the 10° t.d. line. The intersection of coil and condensing unit curves nearest to this point shows that a 3-hp condensing unit and two happy medium coils, each with a basic rating of 1180 Btu, would be the most economical equipment selection for this job in terms of both first cost and operating cost.

To illustrate the point made earlier regarding the selection of coils at 15° t.d., let's assume that you have the same load of 23,650 Btu. Selecting the coils without the use of the system capacity graph, you would choose coil combination 3 and 4, having a total of 23,550 Btu at 15° t.d.

Now if you check on the system capacity graph (page 52) you will find that the balance point of coil combination 3-4 with a 3-hp condensing unit at 100 F ambient actually is 22,000 Btu total system capacity and 14° t.d. Note that this system capacity is 10% less than that of the selection made at 10° t.d.

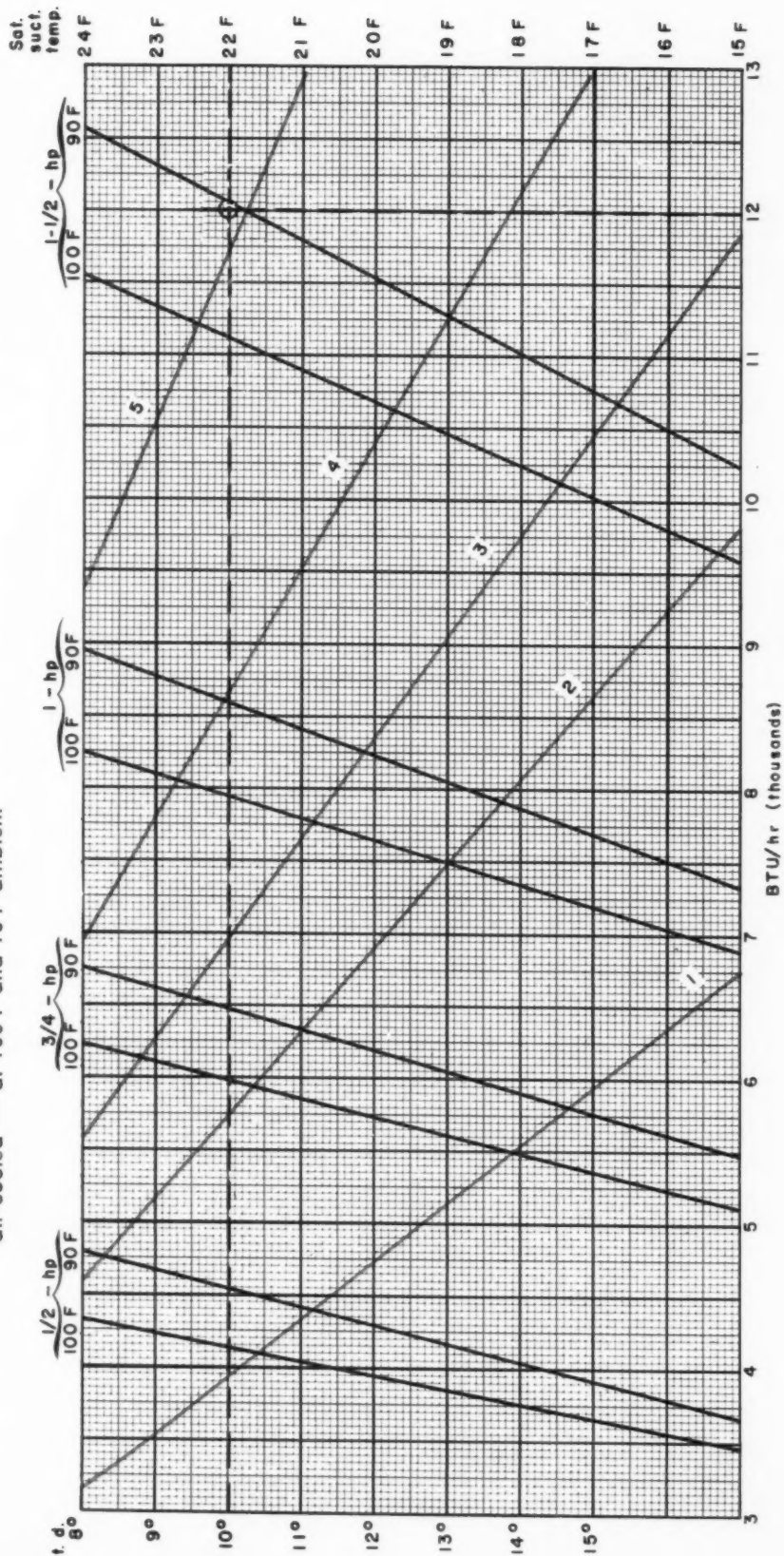
The selection made at 15° t.d. would be unwise

Continued on page 53

SYSTEM CAPACITY GRAPH for 34 F cooler

Coils (color lines)
happy medium type — high surface, low cfm
Condensing units (black lines)
air-cooled — at 100 F and 90 F ambient

COIL NO.	BASIC RATING 10° t. d.	10° t. d.	15° t. d.
1	400	4,000	6,000
2	580	5,800	8,700
3	700	7,000	10,500
4	870	8,700	13,050
5	1,180	11,800	17,700

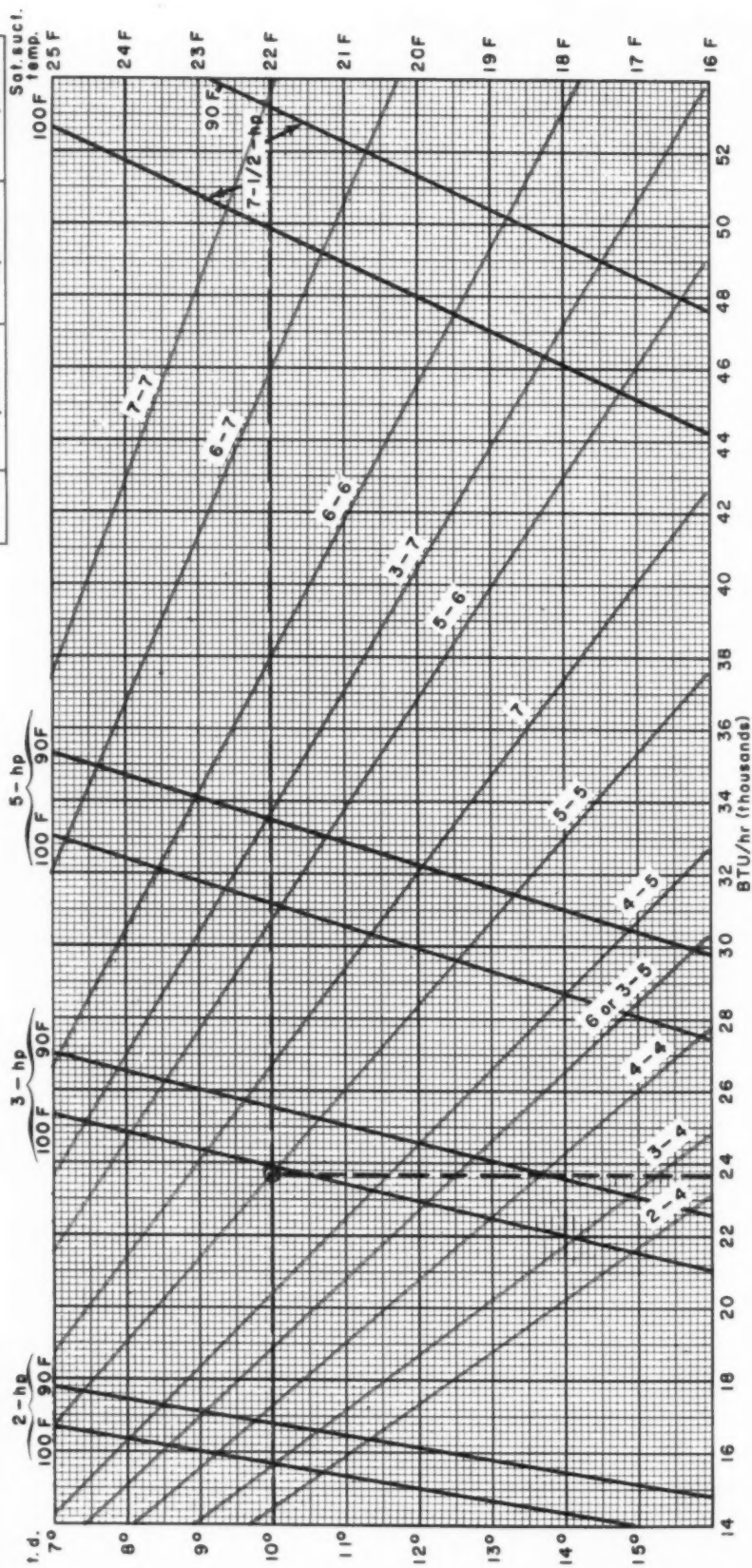


SYSTEM CAPACITY GRAPH for 34 F cooler

COIL NO.	BASIC RATING 16° t.d.
1	400
2	580
3	700
4	870
5	1,180
6	1,890
7	2,660

Coils (color lines)
happy medium type — high surface, low cfm
Condensing units (black lines)
air-cooled — at 100 F and 90 F ambient

COIL COMB NO.	BASIC RATING 16° t.d.	10° t.d.	15° t.d.
2-4	1,450	14,500	21,750
3-4	1,570	15,700	23,550
4-4	1,740	17,400	26,100
3-5	1,800	18,000	28,200
4-5	2,050	20,500	30,750
5-5	2,360	23,600	35,400
5-7	2,660	26,600	39,900
5-6	3,070	30,700	46,050
3-7	3,360	33,600	50,400
6-6	3,780	37,800	56,700
6-7	4,550	45,500	68,250
7-7	5,320	53,200	79,800



APPLICATIONS MANUAL

Continued from page 50

and uneconomical for most installations. The two No. 5 coils balancing the 3-hp condensing unit at 10° t.d. are much more economical in Btu per dollar and also in operating cost. First cost of this system would be about 5% more than the coils selected at 15° t.d., but the system would offer 2000 more Btu per hour, a capacity increase of nearly 10%.

Note that both system capacity graphs presented with this article are designed for 34 F coolers using air-cooled condensing units at 90 or 100 F ambient, and happy medium (high surface, low cfm) type coils. The coil numbers are not model numbers but are merely arbitrary designations. Where coil combinations (2-4) are shown, it means one coil of each capacity indicated should be used together in the system.

The graphs are adjusted for line pressure drop. Note that 10° t.d. in the 34 F cooler does not show as 24 F suction temperature, but rather as 22 F, reflecting the 2-lb pressure drop.

If you have an extremely high humidity application (90-95%) select your coils at 8-9° t.d. If the job calls for 80-90% humidity, pick the coils at 9-11° t.d. For 70-80% humidity, select coils at 11-13° t.d. From a Btu per dollar standpoint, I don't advise going beyond 13° t.d. in coil selection — unless, of course, extremely low humidities are needed for special applications. ♦

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Your
WATER
CONDITIONING
IS

OK
WITH
S-K

PREVENTIVE
MAINTENANCE

STILES-KARLSONITE

CORPORATION

Dept. SKB
WAUKEGAN, ILLINOIS



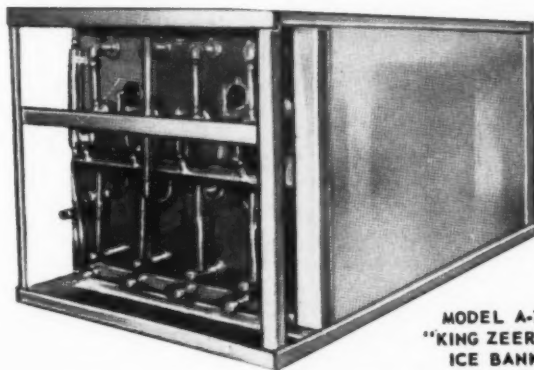
Prevent clogging deposits... caused by scale and corrosion... on your water-using equipment. With Stiles-Karlsonite products for assured preventive maintenance... your water is always crystal clear... tasteless... non-toxic. Easily installed... Stiles-Karlsonite dispensers automatically feed Karlsonite into water systems. No moving parts... minimum maintenance.

Today... write for new 24-page brochure.



Add a "King Zeero" ICE BANK to Your Refrigerating System for Effectual, Economical Air Conditioning

The "King Zeero" ICE BANK is designed to deliver 32° to 34°F. ice water for recirculation through air cooling coils in exactly the right amount when and where it is needed. It levels off "peak" and "valley" loads. Peak loads many times compressor capacity are easily handled. Ice Banks may be added to increase existing capacity. Refrigerant: Freon, Methyl Chloride or Ammonia.



MODEL A-7
"KING ZEERO"
ICE BANK

CAPACITIES - 500 lbs. to 30,000 lbs. (72,000 B.T.U.'s to 4,320,000 B.T.U.'s) in a single unit. Multiple units may be installed.

The Patented Coils with Built-in Louvres opposed to the flow of water through the ICE BANK provide turbulence. This eliminates a mechanical agitator - insures all the water rubbing all of the ice. No upkeep or repair expense whatever.

The "King Zeero" Ice Storage System of water chilling has definite advantages over direct expansion, or other types of ice accumulators.

Saves power through smaller compressor requirement. Simple construction (no moving parts). Dependable in performance. Low operating and costs.

Let the ice stored during light loads take care of peak loads. The compressor need only handle the average daily load - not the peak.

THE KING ZEERO COMPANY

4300-14 W. Montrose Ave. - Chicago 41, Ill.

Manufacturers of Ice Builders - Ice Builder Cabinets - Ice Banks



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Wholesaler **ACTIVITIES**

ARW members must lodge complaints before FTC can act on o.e.m. problem

The long-smouldering resentment of Air-Conditioning and Refrigeration Wholesalers against the "o.e.m. for resale" activities of certain manufacturers may soon be fanned into the flame of action. ARW has asked its members to consider lodging formal complaints with the Federal Trade Commission on specific cases in which they feel they have suffered injury.

FTC chairman Paul R. Dixon told ARW executive vice president Thom Muir that the federal group welcomes complaints by an association. Action, however, must depend on individual wholesalers since ARW, as an association, can't testify, Muir was told. And the individual complaints must be sworn statements, not hearsay.

What heightens the importance of this problem, Muir points out, is that any o.e.m. for resale activity affects not only the wholesaler but also his contractor and service customers, because any price discrimination is directly reflected in their buying and selling operations.

This problem has been brewing for many years, but the initial step toward firm action was taken in January when Muir outlined the difficulty in a letter to Air-Conditioning & Refrigeration Institute. He covered these points:

- Wholesalers have complained for many years that components sold to o.e.m. were showing up as competition in their marketing area. These components were priced equal to, or under, cost to the wholesaler.
- When wholesalers complained, component manufacturers often corrected the situation. But sometimes they didn't.
- ARW's legal counsel said that in just about every case there probably was a violation of the Robinson-Patman Act by both component manufacturer and o.e.m.

- Wholesalers wouldn't take legal action if it could be avoided.

ARI's legal counsel gave Jones its opinion of the legal implications in Muir's letter later in January. The counsel stated:

- In selling components purchased in excess of its normal o.e.m. requirements, the o.e.m. acts as a wholesaler.
- The discount granted him as an o.e.m. gives him a competitive advantage over the wholesaler selling in the same market.
- This discount can't be sustained since it results in a discrimination in price for which component manufacturers can be held accountable.
- There's doubt that o.e.m. can be charged with violation of Robinson-Patman Act.
- It's not a function of ARI to attempt to regulate the details of a member company's business operations.
- Neither can ARI, as spokesman for the industry, afford to stand aside and ignore the situation.
- Members of ARI falling within the range of Muir's complaints should submit the matter to their own legal counsel for advice.

Several months after this corres-

pondence was sent to ARI members, a survey of ARW members showed the o.e.m. for resale problem had become worse.

A National Association of Wholesalers special o.e.m. committee was established with members from seven wholesaler groups, including ARW and Northamerican Heating & Airconditioning Wholesalers. This committee brought the problem to the attention of the FTC.

FTC chairman Dixon told the committee July 31 that the commission was interested in industry-wide complaints, properly documented, through trade associations.

Muir said, "Dixon stated that if a specific complaint against one or two manufacturers is documented sufficiently to cause FTC to investigate, the investigation will include all other manufacturers in that segment of the industry, to determine the extent of the practice."

Canadian engineers move

Pierre de Guise and Claude Dupras, Montreal consulting engineers specializing in mechanical engineering have moved their firm to 8315, St. Hubert St.

Regional meeting changed

Region 9 of Air-Conditioning & Refrigeration Wholesalers will meet at Disneyland Oct. 6-8 instead of Alisal Ranch as previously announced.

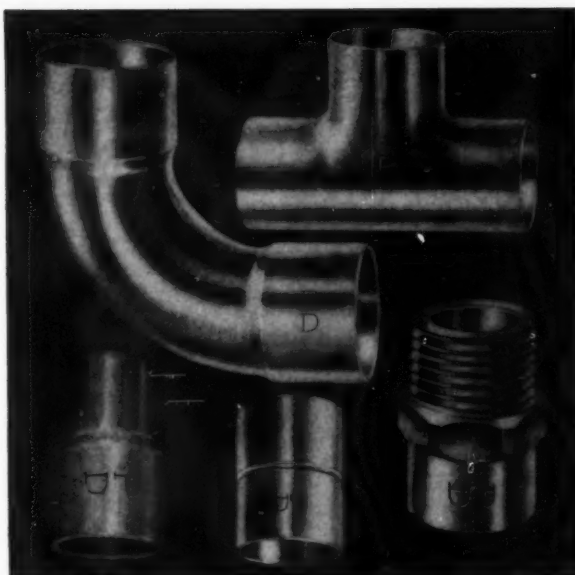


FOURTH LOCATION for A. E. Borden Co., Inc., Boston, Mass., wholesalers, is this new building at 60 Beach St. in Manchester, N. H. In addition to its Boston headquarters, Borden has branch operations in Portland, Me., and Providence, R. I.

WHY YOU SHOULD SPECIFY

Phelps Dodge

*A complete line of
Copper Refrigeration and ACR
Tube, and Wrot Fittings
from one Source!*



1 NEW WROT SOLDER-TYPE FITTINGS. Phelps Dodge has added a wide range of fittings in sizes from $\frac{1}{8}$ -inch to 6 inches. All fittings are protectively packaged for factory-clean delivery.



2 COLOR-CODED ACR TUBE WITH O.D. MARKINGS. Phelps Dodge ACR tube is specially cleaned for refrigeration use. Extra-long coded end caps are your assurance of factory-clean tube at job site. Tube is color-coded for fast identification and marked with outside dimension.



3 NEW P-D PAK CARTON. Reel-type design of convenient new carton allows refrigeration tube to be rolled or paid out quickly on the job. Color-coded tape seals carton for protection, yet opens easily.



Quality tube and fittings sold the quality way—through authorized refrigeration wholesalers!

PHELPS DODGE COPPER PRODUCTS

CORPORATION

New York, N. Y. • Los Angeles, Calif.



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NEW... LA CROSSE SLASHES INSTALLATION COSTS!



**YUKON
WALK-IN
COOLERS**

Now... the new La Crosse "EASE-O-MATIC" system of walk-in installation slashes costs. It's engineered for ease and speed of assembly... only a hammer is needed to tightly and accurately position panels. Enlargement or dismantling of walk-in is also an easy, fast operation. All La Crosse "YUKON" Walk-Ins... both high temperature and freezer units... feature this new system.

WRITE TODAY... for complete information.

LA CROSSE COOLER COMPANY

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EXPORT OFFICE: 60 EAST 42nd STREET, NEW YORK • CABLE: EXPEDITE

REFRIGERATOR SERVICING NOW EASIER THAN EVER!



TWO KLAXON[®] STARTING RELAY AND MOTOR PROTECTOR KITS MEET MOST REPLACEMENT NEEDS!

Nine relays and 8 motor protectors, each packaged complete with leads and terminal screws, cover replacement needs for most 115-volt compressor motors from 1/8 to 1/2 H.P. You reduce inventory, save reorder time, simplify identification, speed servicing. Call your distributor or contact us directly for complete information.



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A CORPORATE DIVISION OF
TEXAS INSTRUMENTS
INCORPORATED

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RECENT

Installations

Continued from page 26

Ventilation tied to movable roof

THE VENTILATING SYSTEM that serves the Pittsburgh auditorium to open this fall is tied into a movable, sectionalized roof. When the roof closes, the ventilating system operates to provide heated or cooled air. The building's airconditioning, heating, and ventilating system supplies conditioned air only to a portion of the building being occupied.

The airconditioning system consists of four main parts. The equipment will discharge 280,000 cfm of air that's recirculated to be mixed



with outside air. Each of eight separate supply air systems has a Westinghouse centrifugal air-foil fan (foreground in photo) that delivers 35,000 cfm at 4" static pressure. Fifteen central air distributors each have both heating and cooling coils (seen at left). Air is exhausted by three air distributing fan sections and 72 coils are used for preheat, reheat, and cooling.

Insulated panels slash labor costs

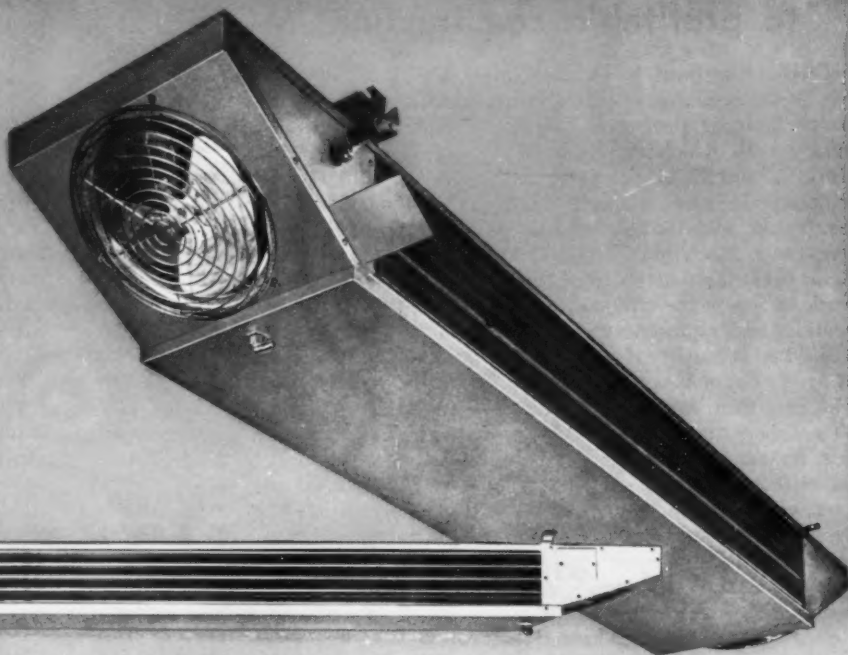
INSULATED PANELS cut labor costs about 68% and drastically reduced installation time of a new cold storage warehouse in an existing building of M. Bloom and Co., Camden, N.J. The self-supporting, lightweight panels were used for flooring, walls, and ceilings. They consist of 3 1/2" of Armstrong Expandofoam, a mold blown urethane molded between 3/4" plywood and aluminum foil facing under heat and pressure.

A rubber-base mastic was used at joints, and the panels were screwed to wood studding. Wearing surface of the flooring is concrete poured over the panels and the interior was finished with quarter-round molding. The warehouse, which is kept at -28 F, was installed by Bonwil Refrigeration Co., Camden.

Another FIRST from **BOHN**

**A
Revolution
in Unit
Cooler
Design**

**BOHN
LO-AIRE**



Aluminum casings with white enamel finish

FEATURING economical forced air refrigeration coils of very low face velocity

Bohn Lo-Aire Unit Coolers provide positive, low air movement resulting in even temperatures throughout the refrigerated space, while maintaining a high humidity. The Model LO is recommended for fresh product storage above 34° F. There are seven sizes rated from 4,000 to 26,600 BTU/HR at 10° T.D. . . economical to buy and economical to install!

BOHN-EL AUTOMATIC DEFROST SYSTEM

For storage temperatures from 28° F. to 34° F., all seven sizes of the Lo-Aire are available with the Bohn-El automatic electric defrost system (Model LOD). This system eliminates wide fluctuations in box temperatures normally associated with air defrost systems and reduces original equipment costs by permitting the sizing of condensing and evaporating equipment on longer running time.

For further information, write for Bulletin 260 or call your BOHN wholesaler.

Buy the known line . . . the **BOHN** line . . . the FIRST line

BOHN

ALUMINUM & BRASS CORPORATION

Danville Division • Danville, Illinois

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THE REFRIGERATION & AIRCONDITIONING BUSINESS/OCTOBER 1961

Contractor-Dealer **ACTIVITIES**

Efficient mechanical work important to profitable construction, MCAT told

One of the most important factors in the economic success of any major building project is the efficiency with which its mechanical work is installed, operated, and maintained. James B. Biddle, Dallas, Texas, told the mid-year conference of Mechanical Contractors Assn. of Texas that by mechanical work he meant the airconditioning, heating, and plumbing systems.

Biddle, executive vice president of M. P. Crum Co., a construction financing firm, told the more than 50 members that before a construction financier invests in a project he must make sure that these systems will produce "the conditions which will encourage maximum human occupancy, and that such installations can be operated and maintained at reasonable costs."

Five other speakers addressed the group on various construction industry topics during the 3-day conference.

Paul Gardner, of Dallas' Floyd West & Co., discussed bonding problems in construction work and

Joe R. Street and Richard S. Gerhard, Texas Employers Insurance Assn., Dallas, spoke on insurance problems encountered by members of the building industry. Wiley Caldwell and L. G. Clinton, partners in a Houston, Texas, law firm, talked on taxation and labor laws as they affect the contractor.

The convention, one of two such education meetings held annually by MCAT, was chairmanned by state president J. M. Boyer. Other officers are Clem Mansheim, vice president, and Tom Tanner, treasurer.

15th NCRSA convention to feature profit theme

"Profit — Our Obligation" is the theme of the 15th annual convention of National Commercial Refrigerator Sales Assn. to be held at Las Vegas' Riviera Hotel Oct. 9-11. Seminar sessions will show dealers how to profit in their service department, in reducing overhead, in diversification, and in financing.

Monday, Oct. 9, will feature the opening address by Dudley M. Cawthon, NCRSA president on the theme and a talk on "Direct Sales — Why They are Harmful to all Phases of our Industry" by Marvin E. Stroble, vice president, Birkenwald, Inc., Seattle, Wash.

Other speeches will be on "Using Knowledge of Customer Behavior to Increase Sales" by Hugh M. Smith, U.S. Dept. of Agriculture, and by Edwin B. Moran, former National Assn. of Credit Management executive vice president, who will talk on "Credit — The Other Half of Your Sale."

There will be four seminars on Tuesday with summary reports of the panelists. The convention's last day will cover four more talks, a summation of convention high-

lights, and election of officers and directors.

Ladies attending will take a guided tour of Hoover Dam and attend a fashion show in addition to other activities.

So. California RACCA fetes grads, opens lab

Apprentices, 28 of them, from the Los Angeles-Orange counties' area were honored in September at a banquet as graduates of a program conducted by a joint journeymen and apprentice training committee.

The men were presented with completion certificates by Refrigeration Fitters branch local union 250. Recognition was also given to refrigeration and airconditioning contractors who did outstanding jobs in training apprentices.

• • •

A lab has been set up to demonstrate the principles of operation, adjustment, and control of refrigeration and cooling systems. It contains working systems and sub-assembly of basic systems and is used as a training guide for journeymen and apprentices.

The facility has working equipment with visual sections to show and explain the functioning components. This is the first of several lab units to be set up.

No longer representative

E. W. Klein & Co. of Atlanta, Ga., is no longer representing Warren Webster & Co., Inc., effective Sept. 1. The Atlanta company is moving to a new, and larger, warehouse.

Appoints new consultant

Murray Grodner has been appointed sales engineer and consultant for the airconditioning and refrigeration division of S & M Schwartz & Co., New York City makers of food market fixtures.

Continued on page 60

Condon branch manager

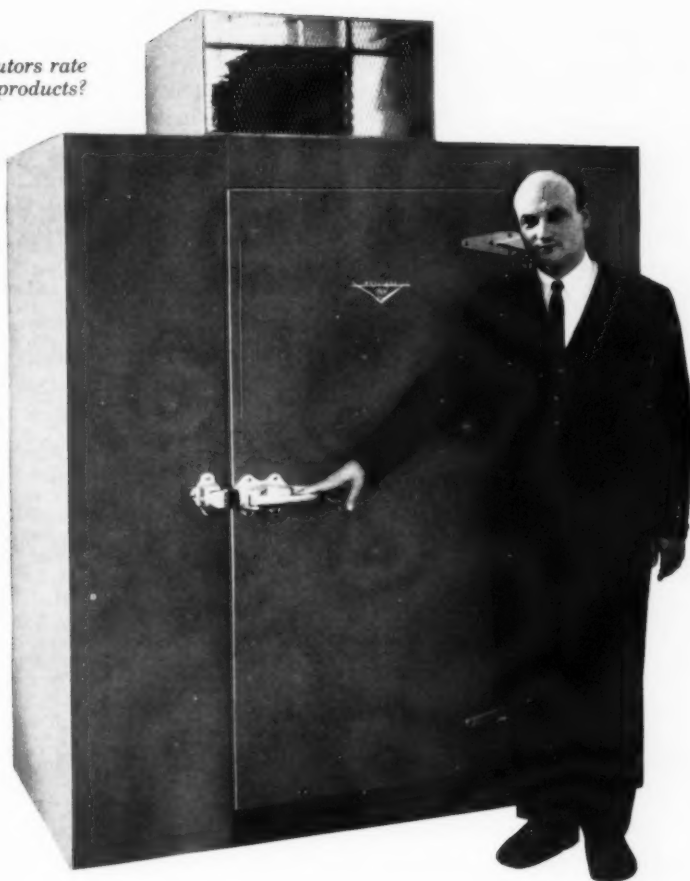
William Condon is appointed branch manager of the Peoria, Ill., office of Stiles-Radel Co., distributors of food store and restaurant equipment. Stiles-Radel recently took over this territory for three lines of refrigeration equipment.

Forms consulting firm

Robert K. Moss, formerly vice president of Dell Corp., has formed a consulting organization. The company, Robert K. Moss, Consultants, is located at 2252 Dehne Rd., Northbrook, Ill.

Moss' group will aid architects and contractors on problems involved in heating and airconditioning installations.

how do distributors rate
NOR-LAKE refrigeration products?



"Nor-Lake means more sales!"

...says Dave Friedman, of Paramount Fountain & Restaurant Supply Corp., Providence, R. I.*

"Our experience indicates that NOR-LAKE equipment gives dealers a number of sales advantages. In our highly competitive markets where ruggedness, dependability and long life are so important, NOR-LAKE features add up to increased opportunities for increased profits.

"First, NOR-LAKE has a full line of quality equipment with 'Fine-Line' appearance. This wide range of attractive refrigeration products allows us to effectively compete and bid on a diverse number of applications.

"We've discovered that NOR-LAKE's years of experience are our best assurance of customer satisfaction and increased future acceptance of our sales efforts. Finally, with NOR-LAKE it's possible to add extra profit dollars to our account through savings in sales time or trouble and service calls.

"To put it simply, NOR-LAKE means more sales because NOR-LAKE has more to offer."

*Paramount Corporation is one of the largest suppliers of equipment for restaurant and hotel chains and institutions on the East Coast.

NOR-LAKE'S "FINE-LINE" IS A FULL LINE

- freezers
- ice cube makers
- refrigerators
- bottle coolers
- walk-ins
- direct draws
- biological refrigerators
- freezer-refrigerator combinations

ALL MODELS AVAILABLE IMMEDIATELY,
IN STAINLESS STEEL IF DESIRED

NOR-LAKE, Inc.

Second & Elm, Hudson, Wisconsin, Dept. 206



Write today for information about NOR-LAKE sales opportunities in your area.

Please rush FREE illustrated information on ☐ Freezers
☐ Refrigerators ☐ Walk-in Coolers

Other _____

NAME _____

ADDRESS _____

CITY _____ STATE _____

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Contractor-Dealer ACTIVITIES

Continued from page 58

100 engineers attend Lau Blower symposium

Nearly 100 airconditioning and heating engineers attended a recent 2-day air moving symposium



CALCULATING A SOLUTION at Lau's air moving symposium are (left to right) W. F. Kramer, K. E. Marsteller, and F. J. Kenney, all of Philco Corp. Standing is Harold Farquhar, chief engineer at Lau.

sponsored by Lau Blower Co. in Dayton, Ohio.

Lau presented discussions on systems resistance, selecting a blower for add-on cooling, and finding internal resistance of a furnace or air conditioner.

William Wentling, Lau's director of engineering and research, conducted the meeting.

B-W can't use York name for furnaces, says court

The U.S. Court of Appeals has ruled that Borg-Warner Corp. cannot use the trade name or corporate name York in connection with its sale of furnace products. The judgment was the result of an appeal by B-W of a U.S. District Court ruling in favor of York-Shipley, Inc.

The District Court, at the same time, was ordered to recompute its original awarding of \$2,280,000 to York-Shipley for damages and to modify the injunction so B-W can continue to use heating coils in its air conditioning devices.

The higher court found that

York-Shipley was first to use York in the sale of heating products. At that time B-W's York Div. was only in the icemaking and refrigeration machinery business.

BOOK REVIEW

Title: Handbook of Instrumentation and Controls, 682 pages.

Author: Howard P. Kallen.

Publisher: McGraw-Hill Book Co., Inc., New York City.

Price: \$15.00.

The manual is for the mechanical services covering steam plants, power plants, airconditioning and heating systems, ventilation systems, diesel plants, refrigeration, and water treatment. It includes treatment of pressure, temperature, flow, liquid level, pH and conductivity, combustion, and boiler controls. Uses numerous illustrations, tables, charts, and graphs to present many control systems as demonstrated in field practice. It gives quantitative data that will help determine how to best select and apply instruments and control systems.



Save a Wheelbarrow Full of Money !
...by using

AIRSERCO

Air Conditioning and Refrigeration
TESTING AND SERVICING
INSTRUMENTS & EQUIPMENT

When you specify AIRSERCO PRODUCTS you are buying "THE STANDARD OF THE INDUSTRY" in ...

- TESTING INSTRUMENTS
- PRECISION VISUAL MEASURING EQUIPMENT
- HIGH VACUUM PUMPS, GAUGES, ACCESSORIES

Airserco is the "complete line" from a test cord to a full production line facility.



Portable Recording Voltmeter

5 lb. Refrigerant Charging Cylinder



Capacitor Analyzer

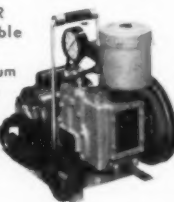


Portable Charging Station



Electric High Vacuum Gauge

KC-3R Portable High Vacuum Pump



Prof. Know How's
CORNER

AIRSERCO
PRODUCT
OF THE
MONTH

POTENTIAL AND
CURRENT TYPE
RELAY TESTER



AIRSERCO No. 8815

A vital new product developed for the Cooling Service Engineer

"AIRSERCO... creative leader of the industry since 1933."

AIRSERCO MANUFACTURING CO. Pittsburgh 13, Pa.
THE AIRSERCO BUILDING

The man who needs testing equipment is already paying for it.

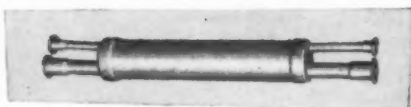
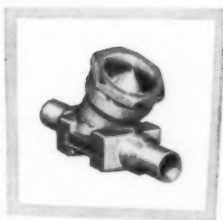
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*See your
Wholesaler
first!*

**if the spec
says**

Superior

or equal...



then your specifications come pre-engineered. "Superior" on the spec is a recommendation based on the experience, investigation and honest opinion of the design engineer. The best components are designed into the system, then specified by name as the finest available in valves, accessories and fittings.

That's why it's more than coincidental that "Superior or equal" appears again and again on the most demanding specs. These valves are custom engineered for refrigeration and air conditioning, they are designed and tested with the right capacity for the right temperature at the right pressure. For instance:

- Line and Globe Valves comply with Military specifications.
- Relief Valves are built in accordance with ASME standards.
- Sight Glasses and Driers are listed with UL
- Heat Exchangers exceed all other commercially available economizers in capacity—size for size.
- Flare Fittings fully comply with ASA and ARI standards.

Superior means quality—in engineering, manufacturing, testing and performance. They install easier, perform perfectly and last longer than any other component you can buy. Follow the specs—follow Superior!

Free Literature:

R-7 Catalog: all products

D-50: roughing-in dimensions

58-28: sizing relief valves

59-35: rating heat exchangers

Write today for your copies—if your problems are more specific, drop a line to our product engineer. He'll be happy to help you.

2676

Superior

valve and fittings company

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Mayfair Markets newest store unit, Anaheim, California

"STYROFOAM —



**installed by a Dow Approved
Insulation Contractor—pays big dividends!"**

"Since we were introduced to Styrofoam insulation a number of years ago, it has become our policy to use only this material for the insulation of our coolers and freezers," says Bob Bernstein, Director of Store Planning for the Mayfair Markets.

"We've found that the letter-perfect installation of Styrofoam by a Dow Approved Insulation Contractor pays dividends in performance over the years.

"Our current plans call for a continued growth of new markets in selected areas of the Western states. In our rapid growth of expansion, we cannot afford mistakes and must depend upon reliability of products used with minimum of maintenance cost.

"Our selection of Styrofoam and the Approved Insulation Contractor Program is our insurance against future costs, which pays dividends in performance over the years."

Low-cost Styrofoam rigid insulation board contains millions of tiny non-interconnecting air cells. This cellular structure



Mr. Robert D. Bernstein,
Director of Store Planning
for Mayfair Markets.

gives Styrofoam a permanent low "K" factor. Further, Styrofoam won't rot, has no food value to attract insects or vermin, and it's so easy to handle that the time and cost of installation are cut to a minimum.

The seal above is displayed by all Dow Approved Insulation Contractors. They are selected by Dow for their excellent business reputation and high quality workmanship. They carefully follow Dow recommendations for installing Styrofoam. For the name of Approved Insulation Contractor near

you, write THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Dept. 1540EH10.

Styrofoam is a registered trademark of The Dow Chemical Company. It is applied only to the homogeneous expanded polystyrene made according to an exclusive Dow process. Styrofoam brand insulation board is available only from Dow and its authorized representatives.

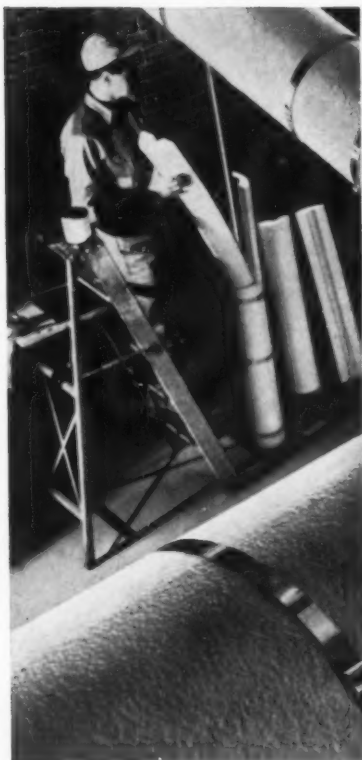
THE DOW CHEMICAL COMPANY



Midland, Michigan

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OCTOBER 1961 / THE REFRIGERATION & AIRCONDITIONING BUSINESS



Stops moisture...

STYROFOAM®

for pipe covering insulation

Low-temperature pipe covering made of Styrofoam does an excellent job and requires minimum maintenance. Its unyielding resistance to moisture and its permanent low thermal conductivity prevent condensation and dripping—reduce heat transfer.

Pipe covering made of Styrofoam will not crack or split from thermal shock. Since it does not absorb water, it is not affected by ice build-up around uninsulated valves. It's lightweight and easy to apply. A complete line of pipe and vessel covering made from Styrofoam is available from the following fabricators:

COLUMBIA ASBESTOS CO., Portland, Ore. • ENGINEERED FOAM PLASTICS CORP., Elkhart, Indiana • GLO-BRITE PRODUCTS INC., Chicago, Illinois • KENNEDY INDUSTRIES, Los Angeles, California • KRANSCO MANUFACTURING COMPANY, South San Francisco, California • MMM INCORPORATED, Houston, Texas • ROBINSON INDUSTRIES, Coleman, Michigan • STYRO FABRICATORS, Kansas City, Kansas • STYROFORMICS, INC., Somerville, Mass. • STYROPLASTICS, INCORPORATED, Minneapolis, Minnesota • TUFFLITE PLASTICS, INC., Ballston Spa, New York



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THE REFRIGERATION & AIRCONDITIONING BUSINESS/OCTOBER 1961

People **ON THE MOVE**

Minneapolis-Honeywell Regulator Co. promotes four men in three departments. **John N. Dempsey** is new director of the research center and associate director of the company's overall research activities. He was assistant director of the center since 1960. Appointed to the newly-created post of manager, manufacturing and engineering, Brown Instrument Div., is **Raymond S. Fries**. He has been with Honeywell for 17 years as manager, new products, and manager of operations, production facilities, commercial division. **Robert Buzby** and **William Wray** are new product sales managers in that division.

Dunham-Bush, Inc., adds five sales engineers. They are: **Charles A. Sargent**, Kentucky, southern Indiana, and western West Virginia; **Walter C. Bullis**, eastern New York; **Edwin C. Cowell**, Cleveland; **Noel W. Wells**, Sacramento, Calif.; and **Jack Morgan**, Maryland.

Henry E. Rossell, Jr., is promoted to vice president, sales, International Heater Co. He has been general sales manager, Air Conditioning Div., American-Standard. In another move, **Murray Wheeler** is named executive vice president.

Earl M. Blakeman joins Nor-Lake, Inc., as northwestern district manager. His territory is Minnesota, Iowa, Missouri, Montana, North Dakota, and South Dakota.

Allied Chemical Corp.'s General Chemical Div. names six regional sales office managers and five assistant managers. In the former group are: **Arthur H. Baker**, metropolitan New York City; **Albert B. Connolly**, Houston; **Harold E. Donaldson**, St. Louis; **William P. Doyle**, Buffalo, N.Y.; **Edmund R.**

Lett, Birmingham, Ala.; and **Wesley G. Webster**, Denver. Assistants are: **Lester I. Adams**, metropolitan New York City; **Joseph M. Byouk**, Chicago; **Stephen J. Muller**, Los Angeles; **Richard J. Regan**, Philadelphia; and **James E. Strader**, Chicago.

Philip H. Snoberger is promoted to sales manager, Bridgeport Thermostat Div., Robertshaw-Fulton Controls Co. He was assistant director, engineering, at the Acro Div.

Radio Corp. of America names **Francis J. Dunleavy** general manager, communications and controls division. He has been general manager, industrial and automation division.

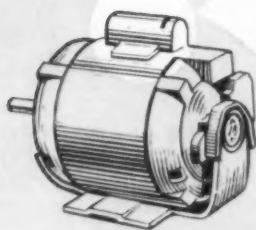
Air Reduction Sales Co. Div., Air Reduction Co., Inc., appoints **R. H. Merriman** manager, gas marketing department. He will direct nationwide sales and distribution of industrial gases. He has been manager, Airco's Buffalo, N.Y., district.

John E. Wilstrup is promoted to sales supervisor, refrigeration sales department, Virginia Chemicals & Smelting Co. He has been field salesman in Texas and Louisiana. His new territory will cover southern territories.

Trane Co. names three sales managers. **Myron E. Hunzeker** takes over at Peoria, Ill.; **Robert C. Binnion** at Philadelphia; and **Donald C. O'Keefe** at Albany, N.Y.

William A. Meiter is named to the new position of vice president,

Continued on page 64



Right from
the start!

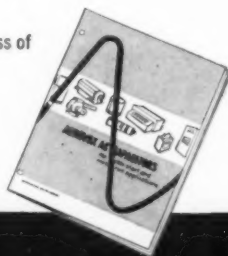


AEROVOX MOTOR-START CAPACITORS

For motor-start capacitors that "stay-on-the-job" longer you'll be **right** from the start if you specify and use Aerovox AC capacitors. Time is money, and you'll save both time and money because Aerovox has the voltage and capacitance combination you need for that repair job.

The pioneer manufacturer in the AC capacitor field, Aerovox today supplies all the leading motor, refrigerator and air-conditioning manufacturers with the major portion of their capacitor requirements. You too can count on Aerovox's advanced engineering techniques and experience everytime you use an Aerovox AC Capacitor.

No need to hunt all over town for the right replacement, your local Aerovox Distributor stocks the complete line of Aerovox AC capacitors in motor-start and motor-run types for off-the-shelf delivery. Right now he has a copy of Aerovox AC catalog (MS 61-10) reserved for you. It's yours **FREE** for the asking only from your local distributor. Write today for the name and address of the Aerovox Distributor closest to you . . .



AEROVOX CORPORATION
DISTRIBUTOR DIVISION NEW BEDFORD, MASS.

Technical Leadership — Manufacturing Excellence

circle 1 on reader service card

People ON THE MOVE

Continued from page 63

Washington services, for Worthington Corp. He was vice president, employee and public relations, and joined the firm in 1927.

Harvey V. Spivey, Sylvan E. Leinwand, and Joseph F. Page are promoted to positions in the marketing department, Controls Div., American-Standard. Spivey covers a 6-state southern area, while Leinwand is new product planning manager, electromechanical devices. Page succeeds Leinwand as sales manager, "TyniSwitch" precision switch products.

New works manager of the York Div., Borg-Warner Corp. is **Kenneth F. Carroll**. He has been with Linde Co. Div., Union Carbide Corp. Carroll will direct all engineering and production activities of the York division.

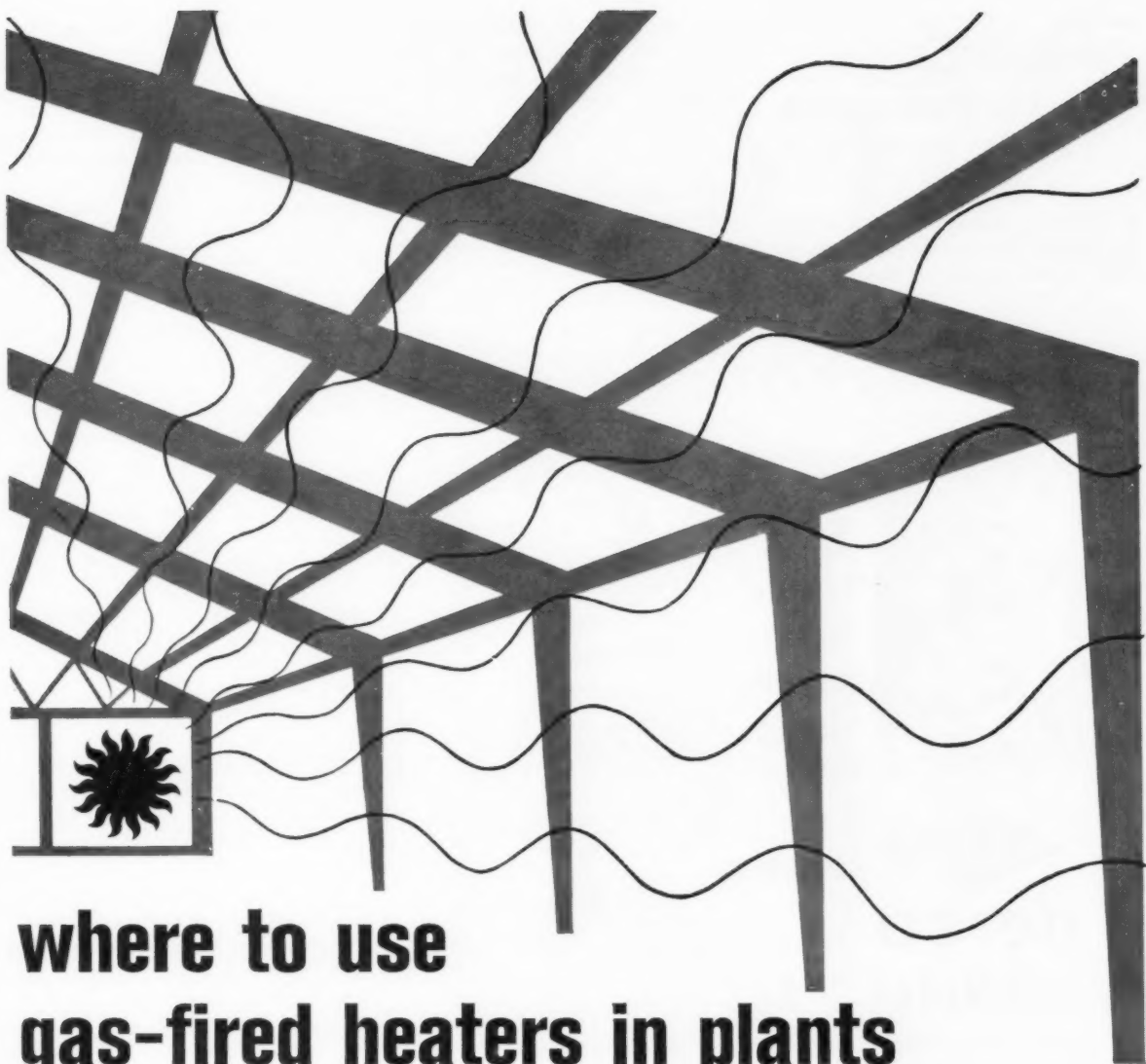
Richard M. Locke, manager, residential airconditioning sales for Minneapolis-Honeywell Regulator Co., has assumed additional duties as director, residential electric heating sales.

The newly-created position of manager, special heat exchanger products, for Acme Industries, Inc.,

Continued on page 66



"Overheated did you say?!"



where to use gas-fired heaters in plants



Free from Reznor: Our just published handbook, "Industrial Applications of Direct Gas-Fired Heaters," tells all about the profitable use of Reznor heaters in manufacturing plants.

Use it to find out the many advantages—and economies, too—of using Reznor unit heaters for comfort heating of work or storage areas. For example, you can spot the heaters exactly where heat is needed, without installing long piping runs from a remote central boiler that may already be overloaded. You can use Reznor Aluminized or stainless steel duct furnaces for tempering make-up air

or heating process air. Or use them in year-round heating and cooling systems. (Reznor duct furnaces are A.G.A.-approved for downstream applications.)

Among other subjects covered: How to blanket shipping doors, how to install heaters 40 ft. high to clear crane-ways; how to use Reznor heaters for stand-by operation on liquefied petroleum gas—with city gas as standard fuel. Published by Reznor, the world's largest manufacturer of gas unit heaters, the handbook is yours free. Mail the coupon—or, call your Reznor distributor or district office, listed in the Yellow Pages under "Heaters—Unit."



REZNOR HEATERS

REZNOR MANUFACTURING COMPANY
Department RAC-10 Mercer, Pennsylvania
Send me a copy of "Industrial Applications of Direct Gas-Fired Heaters."

name _____ title _____
company _____
address _____
city _____ state _____

circle 47 on reader service card

People

ON THE MOVE

Continued from page 64

is filled by **Russell E. Brant**. He has been associated with Industrial Div., American-Standard.

Bristol Co. adds four sales engineers. They are: **Elwin R. Berg**,

Chicago; **John W. Birkenberger**, Waterbury, Conn.; **Glenn B. Finney**, St. Louis; and **Lawrence J. Trudeau**, Waterbury.

Fedders Corp. appoints **Norman Skier** as advertising and merchandising manager.

Research Products Corp. adds **Dean E. Pieringer** as district salesman. He will serve the Chicago

area, with headquarters in Park Forest, Ill.

Dean C. Seitz, sales manager, wholesale refrigeration department, McQuay, Inc., is now also vice president, marketing, American Automatic Ice Machine Co., a McQuay subsidiary.

Bell & Gossett Co. names **W. Donald Braden** field sales manager, hydronic accessories department. He has been assistant manager, market development division.

Donald C. Lynch is appointed sales programming manager, room airconditioners, for Airtemp Div., Chrysler Corp. He has been an eastern district and zone manager with Airtemp since 1954.

George E. Brenton is named regional manager of Vilter Mfg. Corp.'s new Cleveland sales office. He has been regional manager of the firm's Houston office.

Named to staff positions in the marketing planning department, Pennsalt Chemicals Corp. are **John J. Kilkeary**, **William D. Silcox, Jr.**, and **Clair A. Lippincott**.

Fred Manget is promoted to eastern sales region manager, Trane Co. He has been with the firm since 1948 and most recently had been manager of the Philadelphia sales office.

New national accounts manager of Thermo King Corp. is **C. F. Winslow**, who has been general sales manager of Transicold Corp.

Koch Refrigerators, Inc., names **Walter Stolbach** as New York City salesman.


H. A. Pohlig is the new Virginia salesman for Janitrol Heating and Air Conditioning Div., Midland-Ross Corp.



STOP
terminal
leaks
instantly
without
opening
the
compressor

U.S. PAT. PEND.

derco
TERMINAL SEALS



When a leaky terminal occurs there is no need to open the compressor to repair it. Seal the leak in just 3 minutes from the outside of the dome with the **derco** terminal seal, Part T-301.

Simply install the **derco** seal over the existing terminal post and the leak is sealed. Fits almost every unit.

The **derco** terminal seals are surprisingly low priced. Ask your wholesaler for full information.

MADE OF DELRIN The **derco** terminal seals are made of Delrin which is not affected by temperature changes, cannot crack nor short out. It does not increase the length of the original terminal post thereby permitting the replacement of the metal protective cover used on many units.

These seals are packed 3 in an attractive, re-usable hinged plastic box. The box becomes a handy container for nuts, washers, etc.



For Additional Information ask our Wholesaler or Write Us, Dept. B-10

WATSCO INC.
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Descale

**cooling towers,
evaporative condensers,
ice-making machines**

**easily, more safely with
non-fuming Dry Acid Cleaners
based on Du Pont Sulfamic Acid**

EASIER TO USE

Just scoop dry acid cleaners from lightweight, disposable drums into make-up tank. Often can be added directly to equipment . . . no elaborate apparatus required.

SAFER TO HANDLE

These cleaners are dry, non-fuming powders. No danger of spilled or spattered liquids. No danger of corrosive or toxic fumes spreading throughout the building during servicing.

ECONOMICAL

1 lb. of dry acid cleaner does the job of 1.5 lbs. of hydrochloric acid. You'll save on shipping, handling and storage costs.

LESS CORROSIVE

Sulfamic acid is less corrosive than hydrochloric acid; on brass, 60% less; on steel—70%; copper—85%; aluminum—80%. And, with the proper inhibitor, it can be used safely on galvanized steel.

*for more
information,*
mail coupon for free booklet
and names of formulators
who offer these compounds



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INDUSTRIAL & BIOCHEMICALS DEPARTMENT, N-2545 R
WILMINGTON 98, DELAWARE**



Please send me ☐ quick-facts bulletin on Dry Acid Cleaners;
☐ names of formulators offering cleaners based on sulfamic acid.

Name

Company

Address

City State

circle 19 on reader service card

Product DATA

Continued from page 28

Safety valve

Capacity $\frac{1}{2}$ " safety valve with 1" outlet and large gas-handling capacity. Valve body has pear-shaped contour which provides ample gas-flow space and designed so gas escaping at high speed passes horizontally over valve seat when valve pops. This sweeps surface

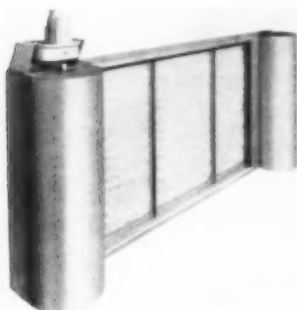


clean so dirt can't lodge here and enables valve to seat tight after it has popped. For both ammonia and halocarbon service. Has capacity range of 1895 pph at set pressure of 100 psig through 7790 pph at 425 psig. — Vilter Mfg. Corp.

circle 144 on reader service card

Air filter

"Roll-Kleen" Model H-5 roll-type air filter for horizontal media movement. With automatic (motorized and controlled operation) or manual drives, with or without media covers on either or



both ends, and in 84 standard sizes. Designed for installation in variety of positions regardless of air flow direction and media movement in either direction. Where headroom or vertical clearance at premium or as direct attachment in air duct. — Farr Co.

circle 145 on reader service card

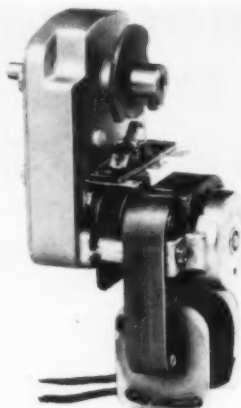
Drug cooler

"Kold-Vue" cooler for pharmaceutical and blood storage. Has automatic safety alarm system, audio and visual, when temperature above or below norm, and can be remotely placed. Other features: outside thermometer, 7-day temperature recorder, white baked enamel interior, adjustable revolving shelves, multi-pane hermetically sealed glass door. Capacity of 20 cu.ft. with o.d. of 34 $\frac{1}{2}$ x 34 $\frac{1}{2}$ x 84". Gray or white vinyl enamel exterior, 1/3-hp capacitor starter, and high capacity blower unit with permanently lubricated motor other features. Also has easily-reached expansion valve, semi-rigid glass fiber insulation, adjustable feet for leveling on uneven floors.

— Kold-Draft Div., Uniflow Mfg. Co.
circle 146 on reader service card

Damper control motor

Provides complete cycle function and positive control. Gear motor, which incorporates cam, switch, and brake, automatically energized when blower turned on. Louvers opened by motor instead of by force of air from blower. Brake causes motor to stop quickly without coasting and holds louvers in open



position. When blower turned off, motor energized again and closes louvers. — Brevel Products Corp.

circle 147 on reader service card

Water cooling tower

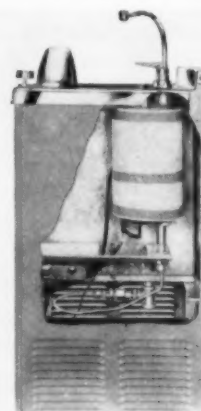
"CompacTower" has capacity range from 100 tons nominal. Has curtain wall casing, honeycomb segments in filling, air intake, air discharge areas. Shipped in two sub-assemblies and all models are modular units with uniform dimensions for multi-cell installation. Offers simplified wiring and piping and internal areas readily accessible through access panels. — Marley Co.

circle 148 on reader service card

Water cooler converter

Here's a conversion kit that changes flush-wall coolers to hot and cold water units. Change can be made on job without altering unit's external appearance and adds 2-qt. heating reservoir.

Brass heating chamber has adjustable thermostat and asbestos insulation. Has 1000-watt corox immersion heating ele-



ment, uses 115-120 v., and operates on own electric connection. — Westinghouse Electric Corp.

circle 149 on reader service card

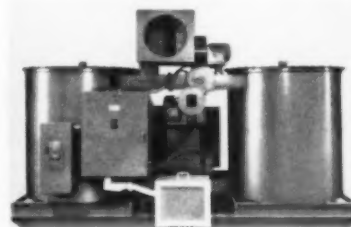
Insulating band

"Miter-Seal" preformed insulating band that simplifies application of jacketed pipe insulation and fabrication of jacketed angles. For use with pipe sizes from $\frac{1}{2}$ to 24", permits fabrication of insulation using only saw, insulating band, and a banding wrench. Instructions provided give precise measurements and angle cuts to be made with each pipe size and insulation thickness and allows job-site fabrication of aluminum-covered elbows, turns, sweeps, and bends directly from straight lengths. For use with company's "Metal-On" insulation system. — Insulation Div., Johns-Manville.

circle 150 on reader service card

Industrial dehumidifier

Model A500 self-contained industrial dehumidifier with high capacity adsorption and reactivation system and high flow-low air transfer valves. Handles 300 cfm and removes up to 75 lb. water



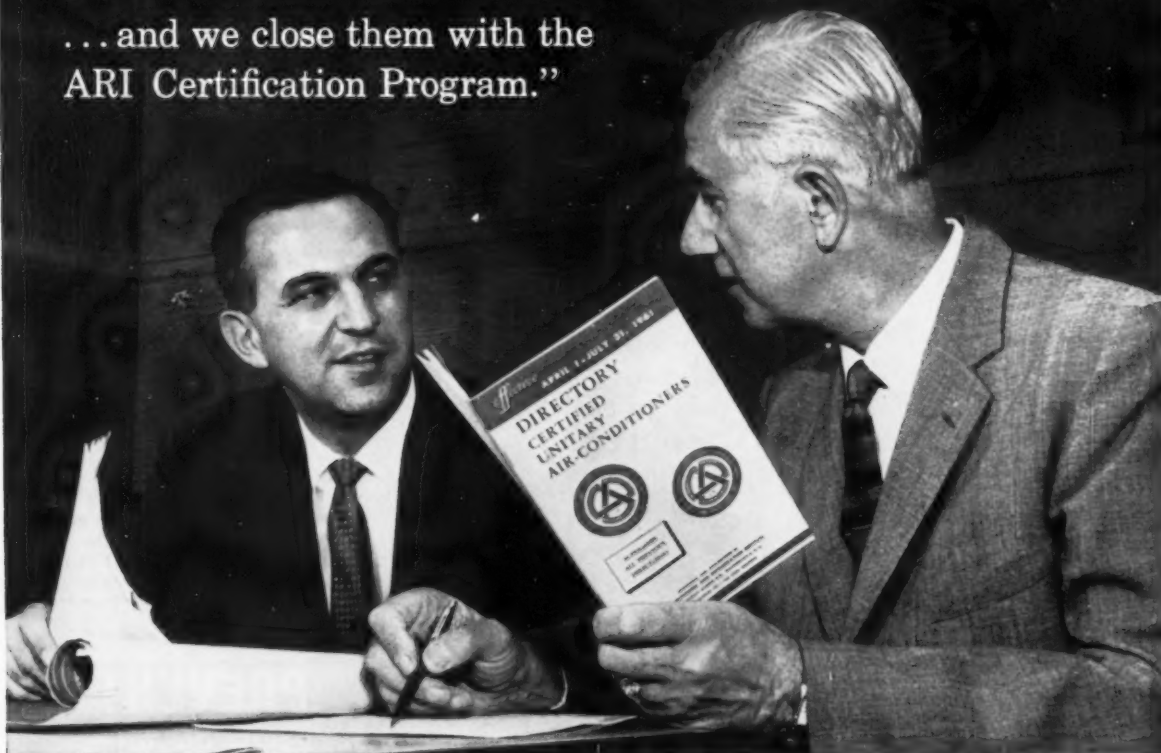
hourly. Has plug-in design, thermostatically protected heaters. For humidity control in unheated spaces, low humidity, dry processing air and low cost humidity control. — Universal Dynamics Corp.

circle 151 on reader service card

Continued on page 70

"We close sales on 42% of our bids for air-conditioning

**...and we close them with the
ARI Certification Program."**



"Thanks to the ARI Certification Program we've been getting more than our share of central air-conditioning installations here in the extremely competitive Washington, D.C. market," says George Rosen.*

"Here's how we do it:

"First we advise our prospect to forget about 'horsepower' and 'amperes'. We explain that the *industry-approved* performance standard is based on Btuh. We tell him his best buy will be the unit that gives him the most Btuh for each dollar he spends.

"Then we use the ARI Directory to back up our performance claims for the equipment specified in our bid. We explain how the Certification Program works and point out that the ratings in the Directory are subject to checking at any time by an independent testing laboratory. We emphasize the severity of these tests and how they assure him of satisfactory performance and minimum maintenance expense. The ARI consumer folder, 'How to Buy Central Air Conditioning' is a real help in getting this story across.

"Our firm has a reputation for integrity, but we have profited from the *extra* confidence inspired by the impartial authority of the industry-approved ARI Certification Program. It is often the decisive factor in closing a sale."

Free copies of the ARI Directory and "How to Buy Central Air Conditioning" are yours for the asking. Write to:



AIR-CONDITIONING & REFRIGERATION INSTITUTE

Department J-1013, 1346 Connecticut Avenue, N.W., Washington 6, D. C.

*Mr. George Rosen is President and General Manager of R & M Air-Conditioning Co., Inc. of Washington, D.C.

circle 2 on reader service card

Product DATA

Continued from page 68

Casement window airconditioner

Model 100CA-2R casement window airconditioner fits vertical lines of casements while giving room-cooling capabilities of standard window units. No remodeling, cutting, welding of window frames necessary. Unit slides into place

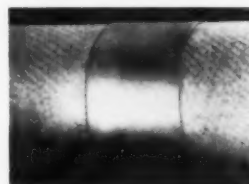
in window after glass removed and fastened by four thumb screws. Other features: thermostat control, permanent washable filter, zinc-coated steel, quiet turbine operation. Specifications include 6600 Btu capacity, 1/10 hp fan motor, 230 cfm, and operates at 115 v. Measures 10-7/8 x 14 x 26" and weighs 100 lb. — *Amana Refrigeration, Inc.*

circle 152 on reader service card

Air duct coupling

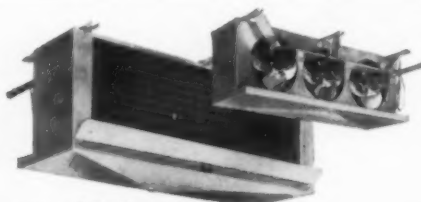
"Ductite" coupling for air ducts assures watertight joint. Is reinforced duct of inorganic asbestos and bonded with

waterproofing ingredients for strong seal. Resists corrosion, fungus, termites and self-sealing. Available in these sizes:



3, 4, 5, 6, 7, 8, 10, 12". Meets FHA Revision No. 3 that calls for restriction in type of duct material acceptable for use below exterior finish grade and provision of watertight joints in such service. — *Johns-Manville.*

circle 153 on reader service card

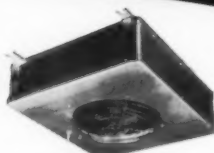


WITT "Whizair" COILS
26 MODELS
Capacities
600 TO 62000 B.T.U./HR.

**WITT coils in SIZES and SHAPES
for every requirement**



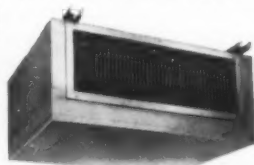
WITT "Cornair" COILS
8 MODELS
Capacities
3800 TO 12100 B.T.U./HR.



WITT "Twinnair" COILS
20 MODELS
Capacities
1000 TO 30920 B.T.U./HR.



WITT "Regalair" COILS
7 MODELS
Capacities
13850 TO 44100 B.T.U./HR.



WITT "MPR" UNITS
For Meat Packaging Rooms
Capacities
8720 TO 54510 B.T.U./HR.

When it comes to doing the job and doing it right you'll find a scientifically engineered Witt Coil that will give you outstanding performance.

THE MODELS ILLUSTRATED ARE ONLY A FEW OF A WIDE LINE OF FINE PRODUCTS. WRITE FOR A COMPLETE CATALOG.

A. H. WITT COMPANY, INC. 940 N. Sycamore Avenue
Los Angeles 38, California

circle 65 on reader service card

Food freezer

"No-Frost" food freezer that has coils for direct expansion of refrigerant mounted within casing. Spray nozzles above coils distribute spray pattern to drench all coil surfaces with non-reactive, non-freezing solution to prevent ice or frost, though temperature down to -35 F. Moisture from air entering freezer with product is washed away by liquid solution that's automatically re-concentrated in apparatus which evaporates water vapor. — *Niagara Blower Co.*

circle 154 on reader service card

Continued on page 72

**PREVENT
costly downtime
with ANCO
CONDENSER CLEANER**

No shutdown needed! Reduce headpressure within a few hours with one application of ANCO Condenser Cleaner. This concentrated, dry chemical is harmless to hands yet quickly and effectively removes heaviest rust and scale in condenser tubes. Equipment stays in operation!



- Dry Chemical
- No Fumes
- No Corrosion
- Fast Acting
- Safe to Handle
- Easy to Use
- Inexpensive

Buy ANCO for sure profits
Condenser Cleaner — Water
Treatment — Algacide



**Anderson
Chemical Company, Inc.**
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OCTOBER 1961 / THE REFRIGERATION & AIRCONDITIONING BUSINESS



©1961 VOLKSWAGEN OF AMERICA, INC.

Made where gas costs 60¢ a gallon.

Regular gas.

The only kind a Volkswagen needs.

The place is West Germany.

13 years ago, tradesmen used bicycles and motor scooters to get around the high cost of gas. Could Volkswagen make a truck that would do for business what our sedan did for families?

Our answer was the VW Panel Delivery. It ran on half the gas that others used.

Many still give all the credit to our en-

gine. (The efficiency of VW's 4-cylinder air-cooled car and truck engines is legendary.)

But to tell the truth, our light weight is just as important.

The engine itself is built of magnesium and aluminum alloys, one of the lightest designs in the world.

And our truck is designed without radiator, driveshaft or the heavy members used in bolted construction. For extra strength, the Volkswagen body is welded.

circle 61 on reader service card

It's all one piece.

We save 1,600 lbs. this way. A $\frac{3}{4}$ -ton load you do not buy gas for.

How much gas don't you buy?

The owner who saved \$480 a year over his former truck did not surprise us. (He did this driving 2,000 miles a month.)

Almost every VW owner gets over 20 miles a gallon and a few even get 30.

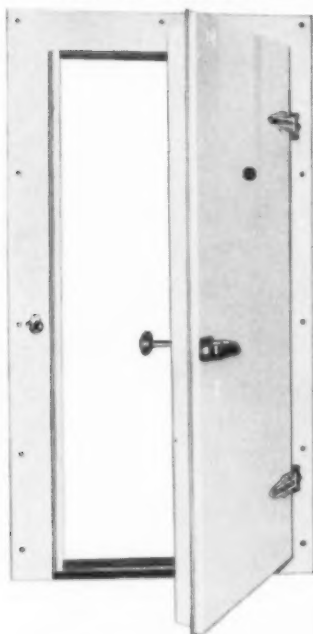
Our average is 24. What's yours?



**INCREASE
YOUR PROFITS
with**



**For Replacement Doors
or
New Construction**



**MOLDED FIBERGLASS
CONSTRUCTION**

seals moisture out.

NO RUST OR WARPING

can't corrode or wear.

LIGHT IN WEIGHT

less than one-third other doors.

NO PAINT, NO UPKEEP

cuts maintenance cost.

COMPETITIVELY PRICED

costs no more for the best.

MANY MODELS AND SIZES

cooler, freezer and reach in doors.

Molded fiberglass cooler and freezer doors designed to fit today's refrigeration needs. A truly revolutionary product development. Write today for literature.

Viroqua Doors

Viroqua, Wisconsin

circle 60 on reader service card

Product DATA

Continued from page 70

General purpose pumps

Expanded line of Series 1700 general purpose pumps that now includes 20 sizes with motors from 1/4 to 7 1/2 hp.



Addition of 14 sizes enables unit to be tailored to job with greater efficiency and economy. For booster service, auto washes, cooling towers, other general purpose pumping applications. — *Taco Heaters, Inc.*

circle 155 on reader service card

Steam coil

Model NFD steam coil with design that supplies steam from both ends of

coil through inner distributing tubes for even distribution of steam across entire coil face. Spray tubes automatically self-centering in condensing tubes and have orifices facing in same direction as steam return. Condensing tubes pitched toward return connection. Coil has die-formed aluminum fins in lengths from 72 to 144". Headers at both ends of coil of heavy-wall seamless copper with die-formed end caps. — *Danville Div., Bohn Aluminum & Brass Corp.*

circle 156 on reader service card

Tube belling tool

Expands end of pipe or tube for insertion of another pipe or tube of same diameter. Driven by electric or air motor, permits accurate expansion. Most common use for tube bundles needing separate return bends to be soldered or brazed in place. — *Elliott Co.*

circle 157 on reader service card

Commercial register

No. 270 Series register with individually-pivoted vertical face bars and horizontal multi-louver valve. For commercial applications where opposed-action valve not required. Finished in beige baked enamel, matches company line of "Multi-Trol" register and grille. — *Air Control Products, Inc.*

circle 158 on reader service card

Continued on page 74

DO YOU SELL ICE MACHINES?

Here's how **Follett** can help you:

NEW 1961 LITERATURE with proven method of choosing most efficient, most economical ice machine—storage bin combination.

READY FOR DELIVERY—every size Follett bin in stock ready for immediate shipment from our distributors.

FOLLETT QUALITY—best construction and design on the market give trouble-free longtime service.

FOLLETT ICE STORAGE BINS

Capacities from 250 to 5,000 pounds

MODEL NO. 50



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OCTOBER 1961/THE REFRIGERATION & AIRCONDITIONING BUSINESS



In every profession, one instrument gets to the heart of the problem quickest, easiest, and most accurately. Amprobe  is the stethoscope of the electrical industry

The Amprobe RS-3* enables you to take voltage, current and resistance readings to help diagnose electrical "ills." It saves you time and effort; it adds to your reputation for ability and service. Here are a few typical applications. Ask your distributor or write today for more details: ■ check resistance of starting and running windings ■ check phase balance ■ determine resistance of motor-control solenoid coils ■ test for low-voltage conditions ■ make commercial and industrial load surveys.* \$52.50 (slightly higher outside U.S.).



AMPROBE INSTRUMENT CORPORATION

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Canada: Atlas Radio Corp., 50 Wingold Ave., Toronto

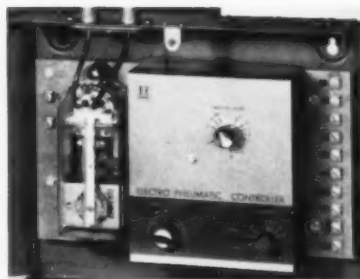
circle 9 on reader service card

Product DATA

Continued from page 72

Transistorized transducer

"Mark III" transducer that electronically converts temperature into air pressure and has transistorized circuitry and etched circuit boards. Can take inputs from up to three different thermostats, and outputs can be sent to pneumatic motors, dampers, and valves. Can also link pneumatic system to central-

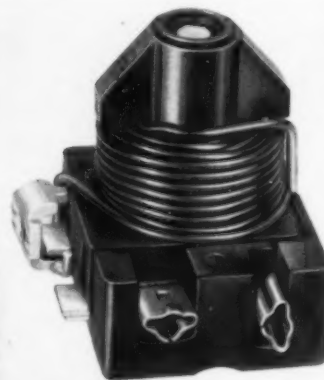


ized electronic control center for remote control operation. — Minneapolis-Honeywell Regulator Co.

circle 159 on reader service card

Motor starting relay

Series 9660-040, 9660-041 push-on relay for hermetic compressors having pin-type terminal clusters. Is advanced design of Series 9660 "Klixon" relay. Can be installed by pushing it onto compressor terminal pins, eliminating mounting brackets, screws, and leads. Relay



cover and spool of high temperature insulated phenolic and internal mechanism is solenoid coil, steel armature, and bridging contact arm operated by armature. Built-in phosphor bronze pin connectors are mounting and connecting means. — Metals & Controls Div., Texas Instruments, Inc.

circle 160 on reader service card

Thousands of installations prove.....

Allin

POSITIVE SEALING LIQUID EYE® INDICATORS WITH BUILT-IN

MOISTURE-REACTORS

foolproof!



All-in-1

- Leak Proof • Lowest operating cost
- Two viewing ports for visibility from any angle • Positive moisture detection
- Unrestricted full line flow
- Easy to install



The MOISTURE-REACTOR is composed of alternate, permanent and changing (Reactor) color bars. When all the bars appear the same color (green)—it's good—there's no moisture in system.

If moisture enters the system, every other color bar changes from green to yellow—then it's bad—the dehydrator should be replaced. When the system is moisture-free again, the Reactor color bars will change back to their original solid green color.

Simple: IT'S GOOD!or..... IT'S BAD!

No more guesswork about the condition of your R-12 and R-22 refrigerant.

Get it from Your Wholesaler Today

Allin

Manufacturing Company

410 NORTH HERMITAGE AVENUE • CHICAGO 22, ILLINOIS

Over 1,000,000 Liquid Eyes in use today!

Spray nozzle

Molded hollow cone spray nozzle for uniform spraying to begin at pressure below 2 psi. Nonporous plastic resists mineral buildup and withstands boiling and freezing temperature. Seven capacities from 0.8 to 7 gpm, and $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{3}{8}$ pipe sizes available to replace metal nozzles in cooling towers, air washers, installed hand tight and cleanable with and evaporative condensers. Is easily installed hand tight and cleanable with common materials. — Austin Mfg. Corp.

circle 161 on reader service card

Meat storage refrigerator

"Chill-Air" reach-in and pass-thru refrigerator for storing meat between cutting and packaging stations and between wrapping room and self-serve cases. Built in prefabricated, knock-down sections with design that has eccentric mechanism and clutch principle so sections aligned. Standard models have two, three, four doors on one side. Overall height 6'6" and depth of 3'3". Length varies with number of doors. Exterior finish of baked on enamel over heavy gage steel. Interiors of zinc plated steel with baked on enamel. High density glass fiber insulation lines each unit. Other features: mullion coils, adjustable wire shelves, chromium-plated latches and hinges. For storage of fresh meat only. — Erickson Industries, Inc.

circle 162 on reader service card

Continued on page 76

**"Here's why I'm switching to
H&M central system
air conditioners**



*...I can get just the fin spacing,
tonnage and CFM I want."*

Now, Halstead & Mitchell gives you a choice of 6, 7, 8 or 10 fins per inch . . . makes it much easier to match a central fan-coil unit to a particular job or to meet specifications.

And look what else H&M offers: a selection of three coil face areas for each model; direct expansion or chilled water cooling coils (1 to 8 rows); hot water, standard steam or non-freeze steam heating coils (1 or 2 rows); cooling capacities of 3 to 92 nominal tons with 880 to 47,750 CFM; Turbu-Flo coils arranged for right or left-hand connections; horizontal or vertical mounting for discharge in any direction . . . and every accessory item you need to simplify your installation.

Why don't you check H&M Central System Air Conditioners? Call your wholesaler or write for Bulletin AHU-100. Halstead & Mitchell Co., Dept.D-10Bessemer Bldg., Pittsburgh 22, Pa.



AH SERIES
AIR HANDLER

HM
Halstead & Mitchell

Central System Air Conditioners • Air-Cooled Condensers • Cooling Towers • Water-Cooled Condensers
circle 22 on reader service card
THE REFRIGERATION & AIRCONDITIONING BUSINESS, OCTOBER 1961

**P
R
E
V
E
N
T**



**STUCK
PUMPS!**

**GET USE PROVEN
PUMP AID**

with New, Improved Features.

1. A new RUST INHIBITOR . . . which VAPORIZES and reaches into the smallest crevices.
2. CONTROLLED FOAM ACTION . . . provides full seasonal protection without foam at start up time.

Now is the time to prevent stuck pumps . . . eliminate consuming repairs next spring. After draining pump, simply inject PUMP AID into pump housing through drain hole. Aerosol packaged PUMP AID E-X-P-A-N-D-S to cover all interior surfaces. At start-up time — just throw the switch and your pump is running. PUMP AID is water soluble and washes away. May be used in any make or model pump.



PUMP AID . . . PREVENTS CORROSION • PRESERVES SEALS • WILL NOT FREEZE • WILL NOT EVAPORATE • IS WATER SOLUBLE • IS NOT TOXIC • IS EASY TO USE • IS REASONABLY PRICED

Order by the case of twelve cans today from your dealer and be prepared when shut-down time comes.

Or write . . .

THE GARMAN CO.
1253 GROVER RD.
ST. LOUIS 25, MO.

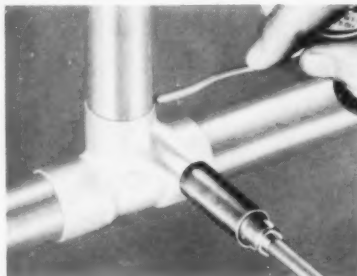
circle 21 on reader service card

Product DATA

Continued from page 74

Prefluxe fittings

Cast bronze and wrought copper "Color-Guard" fittings chemically cleaned of oxidizing elements, protected with thin tin coating, and factory-prefluxed. Makes



installation of refrigerant and copper plumbing systems faster and better. Tin promotes capillary action to improve solder flow, insures proper bond, and increases tensile strength of cast fitting joints. Fittings can be stored indefinitely and insure bonding without additional cleaning or fluxing as rosin flux has long life span. — Nibco Inc.

circle 163 on reader service card

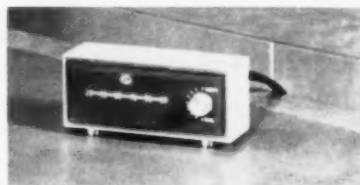
Flexible connector

"UC3" bronze and carbon steel flexible connector for conveying gases and fluids under temperatures up to 750 F, expansion movement absorption, and vibration dampening. Stainless steel model for temperatures of 850 and 1400 F. Has braided outer cover and corrugated inner tube. Available with range of couplings and flanges. — Universal Metal Hose Co.

circle 164 on reader service card

Desk thermostat

"Execustat" desk thermostat enables person to dial own comfort at arm's length, and compact yet heavy enough to prevent accidental tipping or brushing. Is pneumatically operated and adaptable to any space temperature control application. In egg white and light gray finish, has direct control action, heating or cooling application, exposed



knob adjustment, response of 1/2 F, range of 60 to 85 F, and accuracy within 1 F. — Powers Regulator Co.

circle 165 on reader service card

Continued on page 78

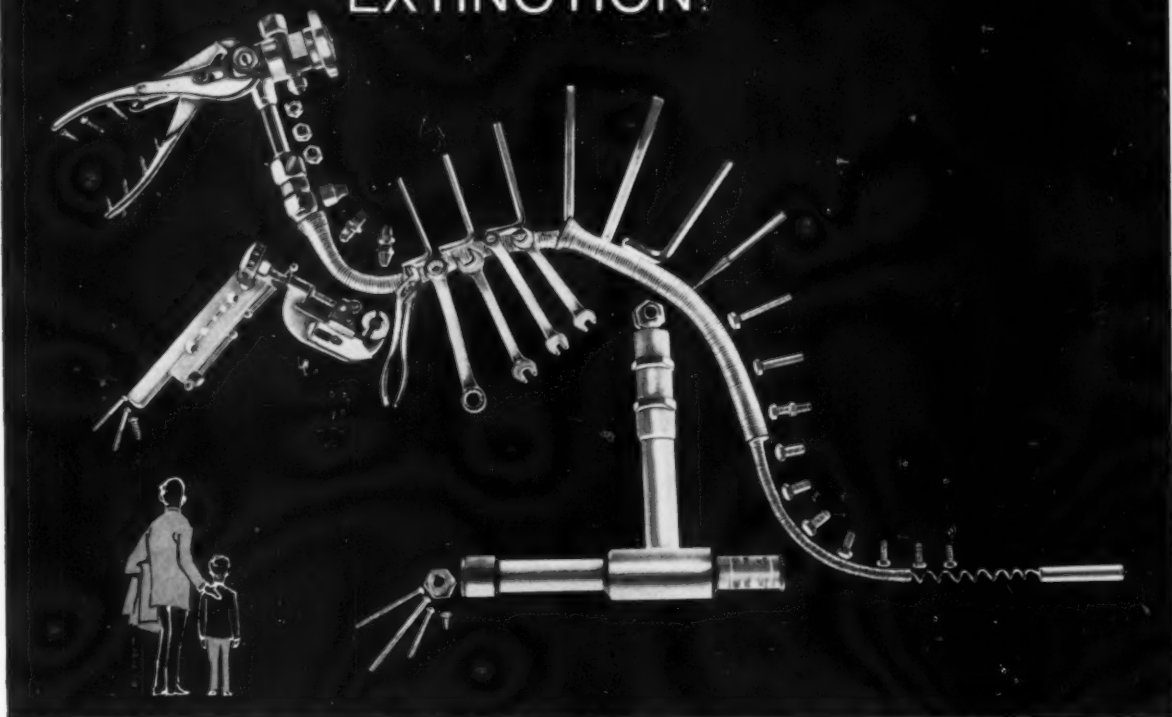
Suit charges infringement of ice-flaking machine patent

A suit filed August 21, 1961 in U. S. District Court in Chicago, by King-Seeley Thermos Co. of Ann Arbor, Michigan, whose Queen Products Division manufactures Scotsman Ice Machines in Albert Lea, Minnesota, charges that Freez-King Corporation of Chicago is infringing King-Seeley Thermos Co.'s U. S. Patent No. 2,753,694, by the manufacture, use and sale of certain ice-flake machines. The suit seeks to enjoin further infringement of the patent and to obtain an accounting for past infringement.

SCOTSMAN®
ICE MACHINES

QUEEN PRODUCTS DIVISION • KING-SEELEY **KST** THERMOS CO.
Albert Lea, Minn.

FIELD FABRICATED REFRIGERATION SYSTEMS ARE DESTINED FOR EXTINCTION!



NEW KRAMER THERMOBANK-COMPRESSOR Systems make field-fabrication as obsolete as dinosaurs and open a new era of opportunity in refrigeration.

Gone is expensive, time-consuming and inefficient field-fabrication of refrigeration systems and with it your major headaches—shortage of skilled manpower and uncertain costs! Kramer's THERMOBANK-COMPRESSOR SYSTEMS are complete systems (high side and low side), factory engineered, instrumented, assembled, tested and run-in. For outdoor installations, they arrive on the job in all-weather aluminum housings, and "Winterstated" for year-round automatic operation.

Requiring only connection of refrigerant lines and electrical service, they permit you to handle a much greater volume of business with your present skilled staff. Gone are costly delays

for components; you get a complete Kramer System with a single order eliminating reams of paperwork. Kramer's System rating assures accurate predictable performance. Costs are predictable, too, since errors in assembly or labor and material estimates are obviated.

Your customers get a better buy and a better system incorporating Kramer pioneered features including the unique THERMOBANK re-evaporative defrost with all-season Winterstat control for any size job and any temperature level.

To learn how Kramer THERMOBANK-COMPRESSOR SYSTEMS can brighten your profit picture, request Bulletin C 484A.

KRAMER THERMOBANK-COMPRESSOR SYSTEMS

KRAMER TRENTON CO. Trenton 5, N. J.

48 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

circle 50 on reader service card

Product DATA

Continued from page 76

Portable stand

Steel portable stand with casters and handle so can be wheeled about as needed. Reversible trays can be used as flat top



shelves for sliding heavy equipment. Vibration-proof fasteners won't loosen in use and each stand has tray size of 18 x 24 x 34". Finished in gray baked enamel. — Bay Products, Inc.

circle 166 on reader service card

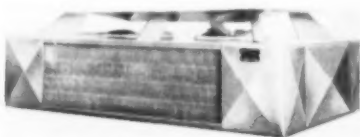
Mobile radio equipment

Compact 2-way mobile radio equipment for UHF 450 megacycle band for communications without skip signals, ignition noise, adjacent channel operation. Combines control head, speaker, and transistorized power supply in one case and transistors isolated from heat sources. Will be supplied in frequency range from 450 to 470 mc with 15-watt power. In two models, for 12-v. operation or for 6 to 12 v. use. — Radio Corp. of America.

circle 167 on reader service card

Unit cooler

"KDF Duoflow" unit for cooling applications where draft-free circulation required. Compact design for applications where space at premium. Heavy-



duty fin coil for use with ammonia or brine refrigerant and insulating pan eliminates condensation. Also has electrically-welded coil which protects against corrosion by hot dip galvanizing

after fabrication. Fans direct-driven on resilient-mounted ½-hp motors, which are for 115 v., 60-cycle, single-phase operation. Heavy gage enameled steel used as standard housing, though stainless steel optional. Can be defrosted by shutting off refrigerant supply and also suitable for hot gas and water defrost. A 3-section sloping pan provided for rapid drainage through large drain connection, and fan motors accessible by removing center pan. — Kohlenberger Engineering Corp.

circle 168 on reader service card

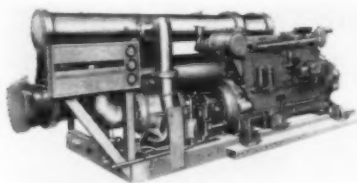
Liquid pump

"Electri-Cand" pump for efficient, safe handling of problem liquids. Pumped liquids, whether toxic, corrosive, or volatile, flow through motor and serve as coolant and bearing lubricant. Corrosion-resistant sealing cans contain liquid and protect motor components. In sizes from 1 x ¼" to 3 x 3" with capacities to 600 gpm, heads to 275', pressures to 200 psi at temperatures to 200 F with standard insulation and to 400 F with special insulation. Ratings in hp from ½ through 25. — Allis-Chalmers Mfg. Co.

circle 169 on reader service card

Water chilling system

"Turbomaster" line powered by natural gas engines. Available factory-assembled, including mounting of engine. Has automatic pre-rotation vane control which, with engine speed variations, offers many capacity controls. Safety



control system includes device to prevent engine-overload to insure protection against system breakdown. Also has auxiliary oil pump that permits engine to idle during warmup, thus saving system wear. System one of 29 models in gas-engine-driven line, with capacities from 90 to 600 tons. — York Div., Borg-Warner Corp.

circle 170 on reader service card

Large capacity boiler

Type 26 boiler for large capacity commercial and industrial low-pressure steam or hot water applications. In 29 capacities from cast iron 5-section 720,000 Btuh input to 33 cast iron section 5,760,000 Btuh input. Rated at 180,000 Btuh input per flue-way. Has heavy cast iron burners, can be ordered for left, right or both for placement of controls and tankless heaters, and heaters in six capacities from 3½ to 15 gpm. Also has easy access to flue cleanout openings, 3" blowoff tapings. — Mueller Climatrol Div., Worthington Corp.

circle 171 on reader service card

Reach-in freezer

Low temperature 3-door and 5-door reach-in freezer for frozen food or ice cream display. Has triple "thermopane" hinged glass doors and can be used in combination for continuous installations of any number of doors except seven.



Vertical display allows more facings in less floor space. Offers four tiers of shelves and basket capacity in bottom. Other features: multi-level display puts merchandise at eye-level height; adding units on either side of existing installation provides for department expansion; and stainless steel door framing and lighting are customer eye-catching. — McCray Refrigerator Co., Inc.

circle 172 on reader service card

Stud welder

"Gramweld" Model 7000 lightweight welder for fastening insulation pins or studs to ductwork, tanks, curtain wall. Consists of welding cabinet weighing 38 lb. and pistol-grip welding gun. Operates on 110 v. ac. Welds nail-like "Insul-Pins" to steel, stainless steel, or aluminum and insulation impaled on pointed pins and secured with spring-metal "Insul-Clips." Measures 7 x 10 x 20½" and up to 20 pins per minute can be welded. Insulating material may be attached after welding and long welding cables permit work area of 80' dia. — Omark Industries, Inc.

circle 173 on reader service card

Air handling silencer

"Conic-Flow" silencer that controls noise in high pressure air handling sys-



tems. Features bell-mouth entrance for minimum entrance loss and solid nose entrance for maximum noise reflection. Also has narrow throat passage for maxi-

Continued on page 80

Modern advanced time controls

FOR COMMERCIAL
DEFROSTING
BEGIN HERE



IN **PARAGON'S** DYNAMIC ENGINEERING DEPARTMENT



8010



8100



600



8200

- **8010 SERIES** — Defrost cycles can be adjusted from 2 to 110 minutes. Bulletin 5947.
- **8100 SERIES** — Defrost cycle automatically ended when built-in solenoid is activated by either remote thermostat or pressure switch. Bulletin 5848.
- **600 SERIES** — For systems which require a timed fan delay or drain period at end of defrost cycle. Bulletin 5945.
- **8200 SERIES** — Length of defrost cycle determined by pressure increase. Bulletin 5949.

Well aware that commercial refrigeration is a rapidly developing industry, Paragon design engineers consistently aim at creating only the most advanced defrost controls.

They take great pride in helping uphold Paragon's long tradition of leadership in the manufacture of quality controls. And their extensive experience, keen skills, and abundance of new ideas are particularly reflected in the 8010, 8100, 8200 and 600 Series — the finest, most up-to-date controls in commercial refrigeration today. Another design job well done!



PARAGON ELECTRIC CO., INC.

Subsidiary of American Machine & Foundry Company
1827 TWELFTH STREET • TWO RIVERS, WISCONSIN



Time is money... control it with Paragon

circle 41 on reader service card

Product DATA

Continued from page 78

mum impedance with straight throat passage for minimum air friction. Diverging design of evase exhaust keeps air turbulence at minimum and allows maximum pressure regain. Available in standard and low pressure types and in many sizes. — *Industrial Acoustics Co., Inc.*

circle 174 on reader service card

Heating-cooling switch

"Zone-A-Trol" heating and cooling control panel and selector switch enable switching from heating to cooling cycle and back again by setting to desired cycle. When switch changes from heating to cooling, motorized control panel automatically cuts burner off and compressor in; also automatically reverses action of all thermostats so controls open on temperature rise. Switch and panel provide control of separate ventilating damper actuator for mild weather ventilation and can be installed in ventilating duct connected to outside air source, opening only when switch in off position. — *Econo Products Co.*

circle 175 on reader service card

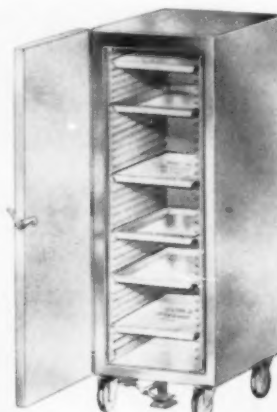
Urethane foam insulation

"Hewfoam" rigid urethane foam building insulation that resists heat, solvents, moisture. Is cellular foam containing about 90% closed cells and absorbs and deadens sound. In white or brown, fire-retardant or non fire-retardant. Can be installed with hammer, cement, or standard mastics. — *H. E. Werner, Inc.*

circle 176 on reader service card

Transportation freezer cabinet

For delivery of frozen foods on emergency delivery when using reefer truck not economical. One model uses hold-over plates to keep foods frozen for six



hours. Second model is complete freezer with condensing unit and coils. Plugged into 110 v. line in warehouse and store after delivery. Cabinet 24½ x 30½ x 6' 7¼" with capacity for 40 pans. — *C. Schmidt Co.*

circle 177 on reader service card

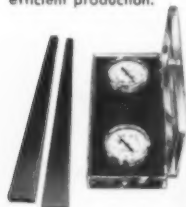
Read Superheat the MARSH way—



—It's the sure way—the easy way
...and it costs less!

Serviceman "Super-Heat" Kit

Contains two attractive, polished brass, 2½-inch thermometers, graduated —40° to +65° F. Also two insulating wrappers for easy bulb attachment and to insulate bulbs from ambient temperature (vital to testing accuracy). Thermometers, wrappers and manuals compactly held in durable 3" x 8" x 1¼" box with handy hinged cover. Moderately priced thanks to efficient production.



Your setting of the expansion valve can be no more accurate than your reading of superheat. How do you read it?

The Marsh way is the accurate way...the lowest cost way, too, when you compare these long-lived thermometers with the breakable glass tube kind.

Instead of those hard-to-read, hard-to-use glass tube thermometers, a handsome pair of distant reading dial thermometers with small bulbs easy to attach at exactly the right place. Widely spaced markings in working area assure far greater reading accuracy than is possible with glass tube thermometers... guaranteed accurate within one division plus or minus.

Put the bulbs where they belong; the dials where they can be seen and compared...and you're "in business." Manual in every kit tells how to get best results. Write for facts or

See Your Wholesaler

MARSH INSTRUMENT COMPANY, Dept. P, Skokie, Ill. Division of Colorado Oil and Gas Corporation • Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103 St., Edmonton, Alberta • Houston Branch Plant, 1121 Rothwell St., Sect. 15, Houston, Texas • Eastern Seaboard Warehouse: Marsh Instrument Co., 1209 Anderson Ave., Fort Lee, N.J.

MARSH Refrigeration Instruments

circle 32 on reader service card

Baffle-cold trap

Optical baffle-cold trap for vacuum pumping systems. Has circular chevron design with coolant reservoir centrally located in assembly. Optically opaque trap means gas or pumping vapor molecules can't pass through assembly without striking baffle surface. When trap cooled, gas molecules removed by conventional vacuum pumping. Can be cooled by all of common agents used in vacuum systems. Flange strength and gasket groove permit assembly to be sealed to ultra-high vacuum system by either elastomer O ring or metal crush gaskets. — *NRC Equipment Corp.*

circle 178 on reader service card

Welding package

"Sigma SWM-14" short arc welding package. Includes wire-feed control unit with centrifugal governor; 200-amp. power supply with variable voltage and inductance controls; 14-oz., 200-amp. torch; shielding gas regulator-flowmeter; 12" wire spool mount; torch service lines and 12½' argon hose and control cable. Two power supplies cover short arc welding range up to 200 amps. with 0.030, 0.035,

and 3/64" wires. Air-cooled torch has 60-degree curved nozzle and rear-entry service lines. Control unit can be operated in



any position and can be equipped with 4" wire spools mounted inside cabinet for portability. — Linde Co. Div., Union Carbide Corp.

circle 179 on reader service card

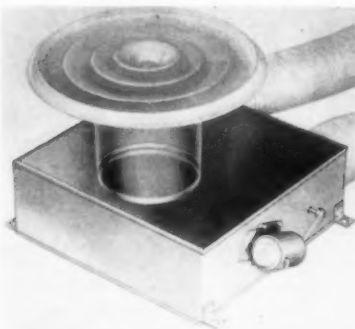
Recording voltmeter

Will make legible, permanent record on 2 1/2" x 35' moving paper tape. Is 3-1/16 x 5-5/8 x 1-11/16" and weighs 20 oz. Uses no ink, leaves no smudges, and pressure-sensitive paper not affected by heat, cold, moisture, humidity, or fumes. Internal-core meter movement, motor, and chart-drive mechanism shielded even when paper roll being changed. Paper feeds at speed of 12" per hour through jam-proof train, and moves over meter movement under viewing window and out a slot. In two models, each with leather carrying case, line cord, and test probes: regular scale of 0/150/300/600 VAC; expanded scale of 95 to 130, 190 to 260 VAC. — Amprobe Instrument Corp.

circle 180 on reader service card

Acoustic terminal control unit

Low velocity dual-duct acoustic terminal control unit with these advantages: close room temperature control; hot and cold air mixing for individual space discharge; attenuation of self-generated and duct-carried noise; manual volume adjustment; pneumatic or electric temperature control operation.



In two ceiling models, bottom and end discharge, in five sizes; and in two window-perimeter models, top and front discharge, in five sizes. — Carnes Corp.
circle 181 on reader service card

Ice cuber-chipper

Model B-11 machine that makes ice cubes or chips and produces up to 90 lb. of ice per day in 60-lb. capacity insulated stainless steel lined bin. Finished in baked enamel on bonderized, galvanized steel and in gray or stainless steel cabinet. Measures 38 1/2 x 24 1/2 x 26 1/2". Only water inlet, drain, and 115-v., single-phase electrical connec-

tions required. — American Automatic Ice Machine Co.

circle 182 on reader service card

Gate valve

Solder-end bronze valve is 150 lb. WSP-300 lb. WOG for use with types K, L, and M copper tubing and in both rising and non-rising stem design from 1/4 through 2". Has OIC alloy 40 stem, molded 1-piece impregnated packing, and full-length wedge guides. Extra heavy wall thicknesses resist distortion and provide for deep, machined end sockets. — Ohio Injector Co.

circle 183 on reader service card



FITS *any plan...*

MEETS ANY STORAGE REQUIREMENT

Here's the economical answer to shelving problems. It's Erecta-Shelf, the versatile steel rod shelving. Erecta-Shelf assembles quickly (a cost factor) and easily to meet almost any height, width or depth requirement. Shelves and uprights are machined to notch rigidly together, without screws or bolts. Erecta-Shelf has been load tested to support as much as 1,000 pounds per shelf! Units fasten back to back, end to end or at right angles to fit any plan... meet any storage requirement.



Erecta-Shelf is truly the shelving of a thousand uses!

Write for free copy of an illustrated folder today.

Available chrome plated or stainless steel

The Seal of Sanitation Quality!

ERECTA SHELF

A quality product of METROPOLITAN WIRE GOODS CORP.
N. Washington St. and George Ave. • Wilkes-Barre, Pa.

circle 35 on reader service card

Build a 2-mile duct

...in one day!

**MOST POWER
PER DOLLAR**

Milwaukee
PROFESSIONAL POWER TOOLS

"Pittsburgh-Lock" HAMMER

closes seams at 20 ft. per minute!

Save hours of time...
do every job right

Say goodbye to the only tedious, costly, time-consuming job of fabricating duct work... closing the seams, by using the MILWAUKEE "Pittsburgh-Lock" Hammer. With this powerful, smooth running tool, duct work seams are closed at the rate of 20 feet per minute, or faster. Perfect working balance. Handles 30 to 22 gauge sheet metal... straight runs, inside or outside radii. Saves half the man hours formerly required and does better, neater work... in the shop or on the job!

Ask your MILWAUKEE Distributor to arrange a demonstration, or write...

Milwaukee Electric Tool Corp.

5310 West State Street • Milwaukee, Wis.

Look
under
"Tools-
Electric"

Find Us Fast
in The
Yellow Pages

circle 66 on reader service card

USEFUL Literature

Continued from page 21

SECTIONALIZED DEHUMIDIFIER. Bulletin SCD-1 lists features of the sectionalized spray coil surface dehumidifier in sizes to 50,000 cfm. A section on construction features has photographs and detailed descriptions on casings, sump tank, drain pans and down spouts, eliminators, spray assembly and cooling coils. Three optional features are briefly described. Diagrams and complete dimension and weight charts are provided for one coil high, two coil high, and three coil high units. — *Blazer Corp.*

circle 213 on reader service card

MOTORIZED STRAIGHT-FLOW VALVE. New catalog describes and shows how the product is installed. Cutaway photos show straight-flow valve design and parts. Tables list sizes, specs, and dimensions, and a separate sheet contains wiring diagrams. Several photos also show the product in use. — *Econo Products Div., Viking Instruments, Inc.*

circle 214 on reader service card

EXTRUDED ALUMINUM LOUVER. New bulletin lists features and suggested specifications of "Penthouse" extruded aluminum fixed louvers, operating louvers, special louvers, and screens, anchorages, and finishes. Layout diagrams show operation and give dimensions. A special section describes and illustrates four kinds of controls for operating louvers. Photographs show the various types of louvers in use. — *Construction Specialties, Inc.*

circle 215 on reader service card

CENTRAL STATION AIRCONDITIONER. Catalog 500 features the complete line of "Seasonmaster" central airconditioning. Included are sections on blower assembly, coils, construction, zone dampers, and unit selection. Cutaway photographs and diagrams show construction features. Also supplied are eight tables of selection and dimensional data with layout diagrams and charts, and charts describing coil connections and giving physical data. Sections on engineering specifications and a psychrometric chart are also here. — *McQuay, Inc.*

circle 216 on reader service card

DAIRY DISPLAY CASE. New brochure lists features of two models of open type self-service self-contained dairy case, available in 4 to 8' lengths. Photographs and a chart giving dimensions and horsepower highlight the release. — *Evans Mfg. Corp.*

circle 217 on reader service card

CONDENSER RECEIVER. Bulletin 8043A replaces 8043 and features data on shell and coil and semi-cleanable shell and tube condenser receivers. A product photograph, chart of dimensional data, list of specifications, and four dimension diagrams are also included. — *Dunham-Bush, Inc.*

circle 218 on reader service card

CONSTANT SPEED 56-FRAME MOTOR. Bulletin L-3313A describes 1/2- to 2-hp motors for compressors, pumps, high inertia fans and blowers, refrigerators, airconditioners, machine tools, and other machines. Sections on open drip-proof motors and totally enclosed motors contain cutaway photos and charts showing horsepower, speed full load rpm and mountings for both single-phase capacitor start and three-phase squirrel cage induction. Mounting drawings, performance graphs and dimensional layout diagrams are also included. Photos of 12 model variations complete the brochure. — *Kingston-Conley, Inc.*

circle 219 on reader service card

ELECTRIC DEFROST UNIT COOLER. Form 5028 describes wall jet electric defrost unit coolers for 28 to 35 F boxes. Tables of specifications, dimensions, and connections are included, plus a wiring diagram and a cutaway photo showing parts used in the control package. — *Dunham-Bush, Inc.*

circle 220 on reader service card

RECORDING INSTRUMENTS. Catalog 625 covers all recording and controlling instruments for temperature, pressure, humidity, and time-of-operation. The release also offers aids for rapid selection of the proper instrument for any need and includes a guide for determining thermal systems; diagrams of typical bulb installations; illustrations of all basic instruments and fittings; and complete specs and prices. — *Weksler Instruments Corp.*

circle 221 on reader service card

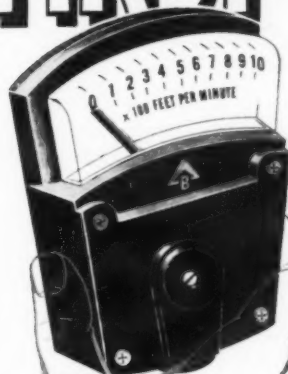
INSULATION WALL CHART. For selection of proper insulation to meet new R factor standards, and specifies products best meeting these standards. Chart is protected with plastic for long life. For use as a reference for architects, utility engineers, heating and airconditioning contractors, and insulation applicators. — *National Gypsum Co.*

circle 222 on reader service card

ELECTRONIC AIR CLEANER. Catalog 1435 features the "Precipitron" heavy-duty electronic air cleaner with pushbutton control. The booklet contains sections on the principles of electronic air cleaning, construction features of the "Precipitron" unit with dual header washing, selection data, and details on specific applications. Cutaway drawings and photographs show how the product is installed and how it works. The brochure also has an efficiency curve and a dimension chart. — *Westinghouse Electric Corp.*

circle 223 on reader service card

FIRST in QUALITY and POPULARITY!



floret AIR VELOCITY INDICATOR

Takes guesswork out of checking the operation of forced air heating, cooling and ventilating installations. Use it to:

- ✓ Check air flow at registers, grilles, diffusers, convectors.
- ✓ Spot objectionable air movements in rooms.
- ✓ Detect leaks around doors and windows.
- ✓ Check air flow in display cases, reach-in refrigerators, walk-in coolers, etc.

\$19⁰⁰

FACTORY NET

The ideal pocket-size air velocity indicator; direct-reading; can be used for checking air flow through openings as small as 1/4" in diameter. Range 0-1000 ft./min. Supplied with pocket case.

BACHARACH INDUSTRIAL INSTRUMENT CO.
200 N. BRADDOCK AVE. • PITTSBURGH 8, PA.

RUSH details on FLORET Air Velocity Indicator to

NAME _____
COMPANY _____
STREET ADDRESS _____
CITY & STATE _____

F-29A

circle 68 on reader service card

THE REFRIGERATION & AIRCONDITIONING BUSINESS/OCTOBER 1961

NOW cut tight curves with line-hugging accuracy



NEW

Milwaukee
CONTRACTOR'S TOOLS

16 ga. Metal Cutting Electric SHEAR

Cuts up to 17 ga. MONEL and STAINLESS

Here's the fast way to slash sheet-metal cutting costs. The new Model 200 MILWAUKEE Shear cuts any shape faster, easier, and with far more accuracy than was ever before possible.

With new advanced blade design, tight right- or left-radius cuts can be made smoothly, easily, and without jamming. The new blade slices easily through even Monel and up to 17 gauge stainless steel... without fouling or forcing. Cut metal is kept from curling by the built-in, full-length deflector plate.

Work edges are smoothly finished right along the cutting line, without further trimming or deburring. A quick twist of the adjusting screw positions the blade for cutting any sheet metal thickness up to 16 gauge... even heavier in trim cuts and aluminum.

See this completely new shear at your nearest MILWAUKEE Distributor, or write for bulletin SH-1.

**MILWAUKEE ELECTRIC
TOOL CORPORATION**

5310 WEST STATE STREET
MILWAUKEE, WISCONSIN



look under
"Tools—Electric"

A9-8013

circle 67 on reader service card

BUSINESS *Briefs*

Continued from page 12

Seven companies form Air Diffusion Council

A new trade association in the air distribution field has been formed: Air Diffusion Council. Seven manufacturers are charter members.

Members manufacture grilles,

registers, ceiling diffusers, air flow control equipment, and terminal air control devices.

One of the group's objectives is developing an industry-wide testing and rating standard for use by industry, government, architects, engineers, heating contractors, and building contractors.

The council will also encourage basic research into scientific laws governing the behavior of air streams in enclosed areas. It plans to start an educational program to

increase knowledge of specification, purchase, installation, and utilization of air distribution equipment.

Charter members are Anemostat Corp. of America; Buensod-Stacey; Carnes Corp.; Connor Engineering Corp.; Titus Mfg. Co.; Tuttle & Bailey, Div. of Allied Thermal Corp.; and Waterloo Register Co.

R. D. Tutt of Tuttle & Bailey has been elected president for 1961-62. Other officers include P. F. Canavan, Connor, vice president; D. Titus, Titus Mfg., secretary; and C. T. Roff, Anemostat Corp., treasurer.

Address of the council is 333 N. Michigan Ave., Chicago.

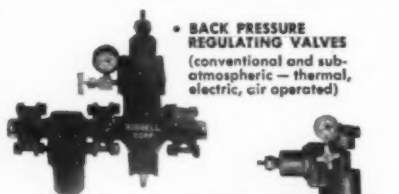
YOUR GUIDE TO PROPER SELECTION of HUBBELL CONTROLS

Whatever your needs for CONTROLS for refrigeration, air conditioning, and industrial applications... Hubbell has the exact controls to solve your requirements... the exact controls designed, developed and manufactured to perform... service free... on all equipment.

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The Hubbell GUIDE to Proper Selection of Controls for optimum performance under the most severe infield service enables you to quickly find the Hubbell Controls which add *plus value* to your refrigeration, air conditioning and industrial equipment.

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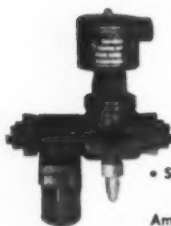


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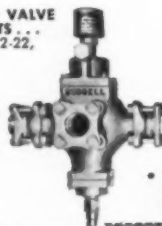


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Room coolers now sold in Southern dime stores

Southern five-and-dime stores are selling window airconditioners as part of a program to expand into small-size department stores by offering appliances.

Kresge stores in Atlanta, Ga., display room units near the cashier's counter and in windows, besides featuring them in newspaper advertising.

Atlanta's downtown Newberry's is being remodeled to include appliances. McCrory and McLellan, two nationwide variety chains, also will carry appliances.

Service Recorder guarantees tachograph

Service Recorder Co. has put a year's guarantee on its tachograph and all seven models of its speed recorders. Company officials believe this is the first guarantee of its kind for this type of equipment.

This guarantee applies to its two new visible speed recorders introduced recently.

Form takes guesswork out of cooling estimates

Contractors can now determine, by formula, a room's cooling requirements with a form developed by National Electrical Manufacturers Assoc.

Here's how the form works: the contractor fills in data concerning the room's size, window and door area, insulation and other factors. By referring to an enclosed map,

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he can also determine climatic conditions throughout the country.

The room unit having a cooling capacity rating which best matches the total cooling load reached on the form will give the best results.

Basis for ratings is National Electrical Manufacturers Association standard for room airconditioners.

The forms are available in pads of 50, at 50 cents each, plus postage, from NEMA Room Air Conditioner Section, National Electrical Manufacturers Association, 155 East 44th St., New York 17, N.Y.

Acme Industries adds 2 new product divisions

Acme Industries, Inc., has set up two new product divisions within its sales organization. Product sales managers have been named to head these departments.

E. David Hannan, previously product management department supervisor, now heads the air handling equipment, cooling tower, packaged air conditioner and coil department.

Manager for packaged chillers, shell and tube equipment and fan coil units is Peter Butterfield. He has been assistant field sales manager.

Organizes new firm

Donald J. Barday, former refrigeration engineer with Freon Products Div., E. I. du Pont de Nemours & Co., has organized Cryo-Engineering Co., West Chester, Pa. The new firm will offer low temperature and refrigeration consulting and manufacturing services.

York increases number of testing laboratories

Engineering research and testing facilities at York Div., Borg-Warner Corp. are being expanded. More than a half million dollars is being spent for a new building adjoining existing facilities on Richland Ave.

Completion is scheduled for early this fall.

At present, additional space is being provided for testing smaller as well as larger equipment. Emphasis will be on packaged air-

Continued on page 87

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PREST-O-LITE Refrigeration and Air Conditioning Outfit

This single compact kit costs only \$43, yet contains every essential piece of equipment for your work. You get three interchangeable open-flame stems to provide the right air-acetylene flame for soldering, brazing, or heating. Fit the sensitive leak detector stem to the same torch handle, and you can pinpoint the tiniest halide gas leaks—as little as 100 parts in 1,000,000 parts of air. Compare that with soapy water!

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BUSINESS *Briefs*

Continued from page 85

conditioners, automobile airconditioning, and central station refrigeration and airconditioning systems.

EXPANSIONS

A new multi-million dollar plant in Elizabeth, N.J., is producing "Genetron" fluorinated hydrocarbon refrigerants and aerosol propellants for Allied Chemical's General Chemical Div. The new plant, third to produce these products, has a capacity of more than 10,000 tons a year. It will supply customers in the northeast.

Completion early next year is scheduled for the 31,500-sq.ft. addition to Trane Co.'s engineering building in La Crosse, Wis. The \$700,000 expansion will provide needed office space for engineering and administrative departments.

ASSOCIATIONS

Rixford Beals, manager of commercial and industrial division of Better Heating-Cooling Council, told Institute of Boiler and Radiator Manufacturer members what is being done about electric heat. Beals said that hydronics and discriminating customers had too much in common to bow to the threat of electric resistance heating. He warned that, although BHC would continue to tell the truth about lower operating costs for hydronic systems, customers must be sold on other reasons for choosing hydronics.

Four major steps have been taken by National Warm Air Heating and Air Conditioning Association to bring about a closer working relationship between all segments of the industry. Basically it centers around an enlargement of association field activities. Steps are: (1) dividing the country into

11 regions, each served by a regional dealer's council; (2) setting up a national dealer advisory council, consisting of chairmen of the 11 regional councils; (3) forming an all-industry cabinet, comprising three representatives of the national council; three wholesaler member representatives; and three manufacturer member representatives; and (4) holding yearly regional conferences in principal cities of each region.

Gabe M. Marin is elected vice chairman of the board and of the executive committee of National Oil Fuel Institute. Marin is president of Sun-Ray Burner Mfg. Corp.

More than 650 persons attended the Silver Shield Indoor Comfort Bureau licensing banquet in Kansas City, Mo., in August. Principal speaker was U.S. Senator John Sparkman. Certificates were presented to 91 members of the newly-formed bureau. Nineteen of these men made honor roll grades in their examinations.

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